

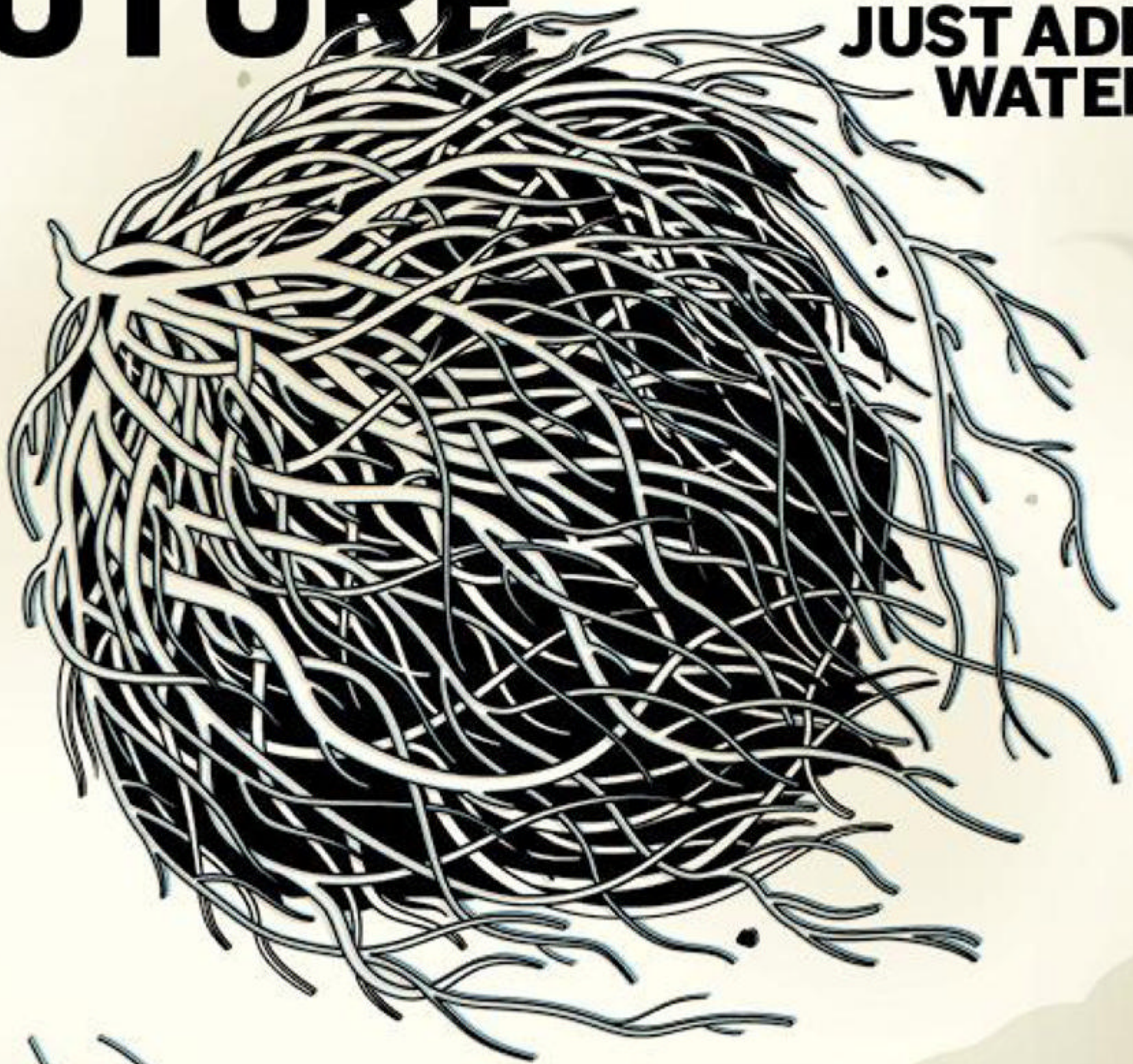
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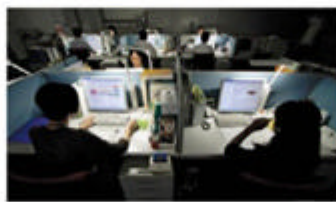
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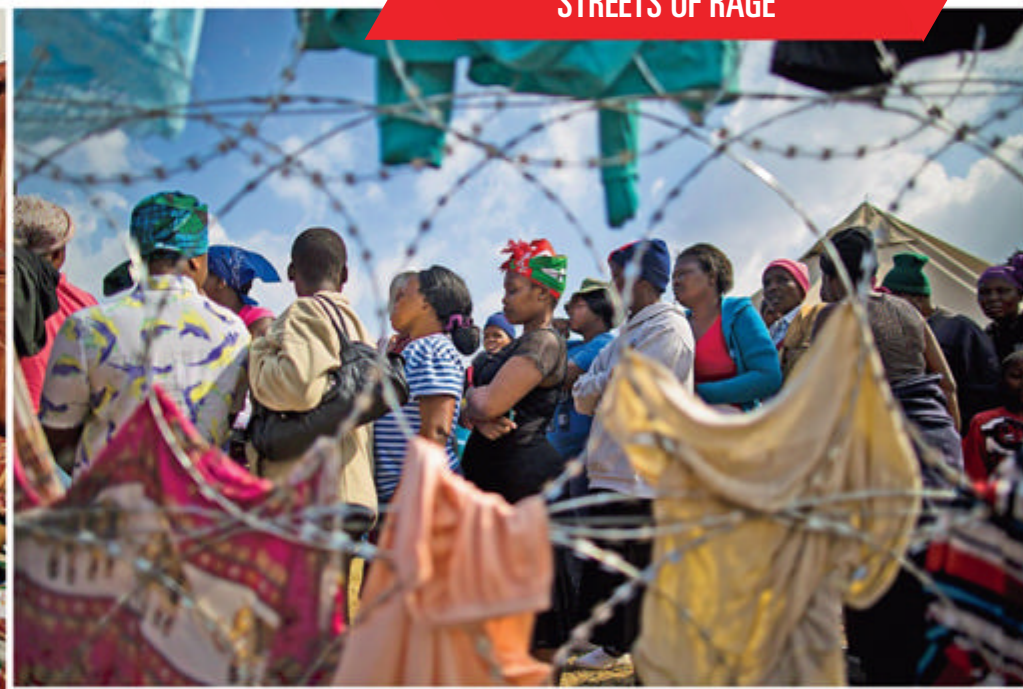
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STREETS OF RAGE





Matt Black/The New York Times/Redux

DRYING UP: THE RACE TO SAVE CALIFORNIA FROM DROUGHT

**SCIENCE GOT CALIFORNIA INTO THIS DESPERATE,
DESICCATED MESS. CAN IT ALSO SAVE IT?**

Felicia Marcus, chairwoman of the State Water Control Resources Board, is trying really hard to convince me that the California dream isn't dead.

We're driving in my beat-up Volkswagen through the Central Valley, just south of Sacramento, and even here

the effects of the drought are stunning: the hills to the west, usually soft and green, are burnt-crisp and yellowed. The fields spreading for miles in both directions are also toast; they look as if they would crumble under your feet. Here and there, crops still live, but they are hedged in on all sides by death.

In the past few years, a drought has been slowly strangling California. Low rainfall and record-high temperatures have created a historically devastating climate. **One recent study** based on tree ring data suggests that the current drought, which most consider to have started back in 2011, is the worst the area has seen in 1,200 years. Earlier this month, California's **annual April Snow Survey**, which measures the snowpack in the Sierra Nevada on the day of year when it is typically at its highest, found just 5 percent of the historical average. The previous low, 25 percent, was set last year.

Marcus says the good news is that no one denies reality anymore; people are ready to talk, and they think they have a solution. "It's not really a perfectly crafted plan," she admits, "but it's a promise from this administration about what we are going to prioritize over the next five years."

Governor Jerry Brown had one look at the snowpack results and took the unprecedented step of issuing an **executive order** that requires cities and towns throughout the state to cut back water usage by a staggering 25 percent. At an April 1 press briefing announcing the first mandatory water restrictions in California's history, he talked smack with some of his typical rough-hewn candidness: "The idea of your nice little green grass getting lots of water every day, that's going to be a thing of the past."

It took decades of work by some of the country's greatest scientists and engineers to create the infrastructure needed to feed all those lush lawns Brown verbally laid to waste; California is in many ways the world's greatest geoengineering project. But there was a fatal flaw in their

system. “We had no idea how the water cycle worked” in the early 20th century, says Jay Famiglietti, senior water scientist at the NASA Jet Propulsion Laboratory. “We didn’t even know what ‘climate change’ meant.”

The ecosystem those midcentury movers of the earth created, so powerful when there is rain and snow, is entirely impotent when it stops. And now it is dangerous.

Welcome to Life on Mars

For most of the 20th century, California was as much an ideal as it was a place, sold to transplants as a true paradise—beaches, vast green lawns, eternal sunshine and the country’s fertile crescent. But that was a lie. California is not lush; it’s arid and dry, more Greece than Grenada. Nature certainly did not intend for there to be hundreds of thousands of acres of lawns and orange groves and almond orchards there. Nor could it ever have supported the 38 million people who now live there. The sprawling Southern California megalopolis—bleached by the sun and desiccated by its heat—is like a settlement on Mars: Everything it needs to survive is hauled in.



A crew removes tumbleweeds from a slope in East Los Angeles. It took decades of work by some of the country's greatest scientists and engineers to create the infrastructure needed to feed California's lush lawns; the state is in many ways the world's greatest geoengineering project. But there was a fatal flaw in their system. "We had no idea how the water cycle worked" in the early 20th century, says Jay Famiglietti, senior water scientist at the NASA Jet Propulsion Laboratory. "We didn't even know what 'climate change' meant." Credit: Diane Cook/Len Jenshel/National Geographic/Getty

It took a unique confluence of irrigation evangelism, engineering know-how and an appetite for large public works to make California California. It started up north. San Francisco was the state's first urban hub, and as the city grew in the early 20th century, so did its thirst. In 1916, construction began on the Hetch Hetchy water system, a project to dam up its namesake valley and construct waterways to deliver water to the Bay Area. Over the next two decades, engineers built tunnels, dams, reservoirs, hydroelectric powerhouses and a 150-mile aqueduct; in 1934, the water started to move. It was one of the largest man-made water conveyances in the world, **delivering** about 260 million gallons per day.

A quick note about measuring water: Chances are, you think of it in terms of gallons. But counting gallons quickly

becomes impossible when scaled to the levels of California's needs. The water management industry measures in million acre-feet (MAF). It takes more than 325,000 gallons to make 1 acre-foot. Hetch Hetchy, which delivered over 290,000 acre-feet per year, was big for its time, but was nothing compared with what was to follow.

The success of Hetch Hetchy begat further feats of engineering spurred on by some of the country's wealthiest businessmen (including the owners of the Pacific Fruit Express, a joint venture between the Southern Pacific and Union Pacific railroads focused on shipping produce back East) and their evangelists, who had designs on making the Central Valley—which had sun and soil, but no water—the Eden of agriculture. In the late 1930s, the Central Valley Project (CVP) put up its first dams and canals.

Today, the CVP **stores** about 11 MAF of water in 22 reservoirs and delivers 7.4 MAF a year to the Central Valley, irrigating more than 3 million acres of cropland. Sacramento followed suit in the 1960s, building the State Water Project (SWP), a system of 20 reservoirs that can hold 5.8 MAF, along with waterways that crisscross the state and deliver about three MAF annually to over 25 million residents and more than 750,000 acres of agricultural land. Combined, these two water conveyances traverse over 1,200 miles and are by far the two largest such projects in the U.S.

They were also largely responsible for creating what we all think of as California. The CVP helped turn the San Joaquin Valley from a high desert into the country's most important hub of agriculture (a stunning feat of hubris and engineering that the U.S. Geological Survey called “the largest human alteration of the Earth's surface”), while the SWP provides a good chunk of what makes Los Angeles and the Inland Empire livable.

“California [became] associated with producing all the food people eat. And that imagery is very much associated with the rise of Southern California in particular—this

paradise where they can just grow oranges,” says Robert Chester, an environmental historian at the University of California, Berkeley. “It’s the foundation upon which a larger identity is then cemented...California as the land of opportunity.”



For most of the 20th century, California was as much an ideal as it was a place, sold to transplants as a true paradise—beaches, vast green lawns, eternal sunshine and the country's fertile crescent. But that was a lie. California is not lush; it's arid and dry. Credit: PBNJ Productions/Getty

The staggering ingenuity of those hydraulic scientists and engineers seduced the state's residents into complacency; they assumed the pocket-protector geeks could always figure out new ways to shift water around. Cut back? Conserve? Not in the Golden State! That attitude still exists in many corners: There have been not entirely facetious proposals to, for example, **build a massive pipeline** from Alaska down to California's Shasta Lake and **construct a channel to** shore up the flows of the Colorado River (which feed San Diego and other cities) with waters from the Missouri River.

Water engineering created "a momentum that took on a life of its own as the panacea," says Chester. "This same mentality acts as a cultural myopia that prevented the consideration of alternative approaches that incorporate more practical and adaptive responses to limited water."

As the Stanford Woods Institute for the Environment pointed out in a **2014 paper**, technological change in the water sector "has generally been marked by stagnation" since the 1970s. A striking comparison can be made with the clean energy sector: From 2000 to 2013, \$69 billion was invested in clean energy, and just \$1.5 billion was invested in water. In the past decade, solar panels have become increasingly efficient and electric cars close to ubiquitous. Meanwhile, we have come up with no new technologies for increasing water supply or lowering demand. On top of that, the water infrastructure is decaying. The California Urban Water Conservation Council works with 76 different urban water agencies. In 2012 (the last year for which it has data), those agencies lost an estimated 57.3 billion gallons of water.

The recent drought has made clear how obsolete California's water technology has become. The silver lining: It may also force California to invest in new science that can help save the state from itself.

Drinking From the Toilet

Take Interstate 5 south 400 miles from Sacramento and you'll end up in Orange County—so named, **wrote local historian Jim Sleeper**, not for any existing orange groves but instead for the promise of a paradise in which the citrus might, one day, thrive. As it did. For years, that covenant was fulfilled with waters piped in from the north. Today, in the aptly named suburb of Fountain Valley, one of the country's most innovative wastewater recycling solutions is weaning the county off those wet imports.

Everything is shiny as hell at the Groundwater Replenishment System (GWRS). The administrative building is roofed in red Spanish tile and has air conditioning to meet your body's every need and dream. There are tidy trophy cases in the hallways, and upon leaving, I am given a swag bag that includes *A History of Orange County Water District*, an 85-page booklet printed on 32-pound bond paper, full color. The GWRS is a prodigiously efficient network of thousands of gleaming pipes, hundreds of pneumatic valves and various other plumbing fixtures, all operating at full capacity with almost no one in sight.



A cattle trough in dry rangeland near Madera, Calif., Feb. 11, 2014. Science got California into this desperate, desiccated mess. Can it also save it? Credit: Matt Black/The New York Times/Redux

The GWRS is the world's largest indirect potable-water system, producing, on average, 215 acre-feet of drinking water a day. It's been in operation since 2008 and is such an unmitigated success that it's already expanding; by the end of May, it will be up to 307 acre-feet per day. That's enough, says General Manager Michael Markus, to provide for the daily water needs of 850,000 people—about one-third of Orange County's residents. "We looked like geniuses in 2008 because we were in the middle of a drought," he says, "and now we look like geniuses again."

The GWRS provides the county with a drought-resistant source of water, at very reasonable prices: It costs water retailers just \$478 per acre-foot. That price is driven down by "subsidies" in the form of grants from an old state water bond. But if you took that out of the equation, says Markus, you are still talking just \$850—very reasonable compared with the \$1,000 per acre-foot it costs to import water from

the Colorado River and Northern California. It also requires only half the energy of imported water.

The plumbing is daunting, but the science and water policy implications are fairly straightforward. The county's Sanitation District is required, by law, to take indoor wastewater (sinks, showers, toilets) and treat it to the point where it is clean enough to dump into the ocean. That, of course, is a massive task...and a huge waste. So instead, the treated wastewater is sent to the GWRS, which puts it through an additional three-stage purification process: physical microfiltration (to remove solids, protozoa, bacteria and viruses), reverse osmosis (forcing it through semipermeable membranes in a pressurized vessel to rid it of dissolved salts, organic chemicals, pharmaceuticals and even the smallest of viruses) and UV treatment (to disinfect the water and destroy any last, tiny organic compounds). At the end, it's been thoroughly rid of all contaminants—the GWRS tests for 7,400 compounds as required by its state permit. The end product is probably cleaner than what comes out of your tap.

The GWRS is “the best-kept secret in Orange County,” says James Herberg, general manager of the county's Sanitation District. Though there are small wastewater recycling plants in California, nothing is remotely close to the scale of Orange County's project. There are plenty of reasons why, but primarily it's because there hasn't been much appetite for or investment in water-recycling technology.

But this brutal drought has spawned many hopeful mimics. Marcus, the State Water Control Resources Board's chairwoman, says the **2014 Water Bond** includes \$800 million in 1 percent financing for wastewater projects, and \$1.5 billion worth of requests have come in. “Look for an explosion” in wastewater recycling in coming years, she says. Already at least 10 substantial potable-reuse projects are in development, the largest of which is planned for San

Diego. Halla Razak, that city's public utilities director, says that in November, they got the green light. In 20 years, she says, one-third of San Diego's water will come from potable reuse.

The Pacific Institute, a nonprofit research institute that focuses on water issues, **estimates** that statewide implementation of efficient wastewater reuse could save 1.2 to 1.8 MAF every year. "To not have ocean discharge would be a fantastic step," says Melissa Meeker, the director of WaterReuse, a nongovernmental organization focused on promoting more efficient water reclamation. "That's like free water."

Salt Water in Your Wounds

There is, of course, another source of free water, tantalizingly close to the state's biggest cities and not too far from the farmlands: the Pacific Ocean. At nearly 64 million square miles, it covers about one-third of the globe's surface and makes the acres of water pumped throughout California seem puny: The National Oceanic and Atmospheric Administration **estimates** it contains 660 million cubic kilometers, or about 535 trillion acre-feet.

The problem, of course, is that you can't drink any of it. Seawater also kills living plants, so it's useless for agriculture. Desalinating seawater at an economically feasible cost has long been the holy grail of water security. And recent projects suggest we might be getting closer.

In the Netherlands Antilles in the Caribbean, there have been desal plants since 1928; today, Aruba has the **world's third largest** such plant. In the water-poor countries of the Middle East, desalination is the difference between life and death. Saudi Arabia, for example, spent \$7.2 billion to build **the world's largest desal plant**, capable of producing about 270 million gallons of drinking water per day. **In Israel**, 40 percent of the country's drinking water comes from

desalination, and projects in various stages of development are expected to raise that to 70 percent by 2050.



An array of pipes used to remove large particles from seawater, an early step of desalination at the Carlsbad Desalination Plant in Carlsbad, Calif., April 10, 2015. Credit: Damon Winter/The New York Times/Redux

There are **2,000 desal plants** in the U.S., but most are tiny, servicing the needs of a factory here and there. Every major attempt in the country has been troubled. In Florida, a plant that can produce 25 million gallons per day opened up in 2008 in the Tampa Bay area, but it took six years longer and cost \$40 million more than expected to construct and rarely runs at full capacity. A plant capable of 3 million gallons per day built in tony Santa Barbara during the 1987 to 1992 drought was completed just days before torrential rains flooded California in 1993. The plant shut down and hasn't been in operation since.

But down the coast, California's first real investment in the burgeoning technology since then is on the verge of becoming operational. At the southern edge of Carlsbad, an affluent, snoozy strip of coastal suburbia north of San Diego, sits the construction yard of the \$1 billion

Carlsbad Desalination Project. At the gate, a Frisbee toss from the gleaming and very wet Pacific, I'm met by Peter MacLaggan, the lanky, sun-worn vice president of Poseidon Water. He tells me the plant was originally planned to open in 2016, but the drought has put it on a fast track, and it could start pumping water as early as next month.

MacLaggan has lived in water-poor San Diego his whole life. When I ask about previous droughts, he tells me what he remembers most is a lake on a friend's family's property to the east. During the drought of the late '70s, it dried up, and what remained was "so full of fish that you'd throw a rock in and the whole thing would start vibrating. There were catfish that just gave up and would jump out of the water."

The big problem now, he says, is that San Diego relies far too much on imported water; 85 percent of it comes from either the Colorado River or up north. The city has been steadily moving to reducing that reliance on outside water. Now that process will rev up. "San Diego will actually look more like it did 70 years ago, when all of our water was local," MacLaggan says. "We are going to recycle every drop we've got—and get the rest from the ocean."

One of the biggest knocks on desal is that it eats a huge amount of energy. But proponents argue that's a misguided belief based on outdated information. In the Carlsbad project—designed in consultation with IDE Technologies, an Israeli company that built and manages three of that country's desal plants—there are energy recovery units that take almost all of the latent energy that builds up in the pressurized pumps and redirects it for other uses.

MacLaggan says it works something like the regenerative braking that hybrid cars come with and calls it a "game changer." He uses this phrase a lot. "You used to need to push the water through the filtering system two times to get it drinkable; now it's just one." (Game changer.) "In the old days, the filter membranes lasted three years; now you get

eight to 10.” (Game changer.) “The membranes are also so much better that you need less of them.” (Game changer.)



A skier threads his way through patches of dry ground at Squaw Valley Ski Resort, March 21, 2015 in Olympic Valley, Calif. Many Tahoe-area ski resorts have closed due to low snowfall as California's historic drought continues. Credit: Max Whittaker/Getty

If it works, expect similar plants to mushroom up and down the Pacific coastline. **At least 18** are in development already, including large projects in Huntington Beach in Orange County, Camp Pendleton (a Marine Corps base about 8 miles north of Carlsbad) and Monterey County. And in what could be read as a referendum on the technology, Santa Barbara is bringing its desal plant back online. “We have enough [water] to get us through to 2017,” says Joshua Haggmark, Santa Barbara’s city water manager. “But then we go over a proverbial cliff if we aren’t able to bring on desal or rain.” Well, you can’t buy rain, but \$40 million in capital plus \$5.2 million in annual operating costs can buy Santa Barbara enough desal for 30 percent of the city’s potable water.

Haggmark and other proponents are confident desal will become more cost-efficient, and soon. The cost has

gone down considerably in the past 20 years, despite little investment in the technology. “If California would start investing in desal, you’d see a spike in investment in the technology,” Haggmark says. “You’ll see money managers park money there, and you’ll see continuing R&D.”

But many water policy experts aren’t so optimistic. They point to the failures of Tampa Bay, Santa Barbara and Australia. “The Australians invested a lot in desal [facilities] during the millennium drought, and most of them are not being used at the moment” because the energy costs are still too high, says Ellen Hanak, a senior fellow at the Public Policy Institute of California and director of its Water Policy Center. She says desal makes sense only in places, such as the Middle East, where there are no cheaper alternatives.

“The cost of desal is driven by three things: the cost of land, energy and infrastructure,” says Newsha Ajami, the director of urban water policy at Stanford University’s Water in the West program. For desal to work economically, she says, you need to eliminate one of those costs. For example, Israel has some of the cheapest desal water, and when you go deep into the numbers, it’s “because the land is basically socialized.” For instance, the Ashkelon plant was constructed on land that **was provided** at no cost by the Israeli government. Similarly, on the Arabian Peninsula, both land and fuel are cheap and plentiful.

On the other hand, land in coastal California is notoriously expensive, and fossil fuels remain relatively costly. But there is another source of energy that California has in abundance: sun.

The Almond Tree Graveyard

I meet Garrett Rajkovich and his son Nick at a gas and fast-food way station off Interstate 5 in Fresno County. Rajkovich is a third-generation California farmer. His grandparents came from the former Yugoslavia to settle in Santa Clara County; they grew apricots and prunes there. When GE, Hewlett-Packard and other early tech companies

moved in and the area turned from farms to suburbs, his father transplanted the family farming operation to the San Joaquin Valley. Today, Rajkovich farms 1,200 acres here, not too far from where the pavement hits the dirt, and where signs calling for an end to the “Congress-Created Dust Bowl” have been planted.

In recent months, Big Ag has taken a lot of heat for its role in the current water shortages. According to the State Water Control Resources Board, farms use 32.3 million acre-feet of water annually, about 40 percent of the state’s total water—or 80 percent of the water used by humans (the remainder mostly flows unimpeded, a legally mandated hedge against environmental disaster)—but account for only 2 percent of the state’s \$2.2 trillion gross domestic product. By now everyone knows it takes a gallon of water to grow an almond, and many are using that as a rallying cry, calling on the governor to stifle agriculture’s water use even further.

Without a doubt, says University of Missouri water historian Karen Piper, “we need to rethink how agriculture is done in California.” There is, she says, a long history of wasteful water use in the farming sector. As soon as the CVP was developed, small farms throughout the Central Valley were encouraged to use the imported water to irrigate their crops, and they were incentivized to be liberal in their usage. “If they didn’t use that water, [the U.S. Bureau of Reclamation] said it was wasting water, and they’d give it to someone else,” says Piper.

Today, efficiency has improved, but not exactly in a way that helps keep water supply up. “They’re growing virtually twice as much crop value as they were a decade ago precisely because they’ve become more efficient,” says Marcus. “It’s a miracle of food and fiber.” But, she adds, “they haven’t put in efficiency to put it back in the environment.” The Pacific Institute estimates that we could save a staggering 5.6 to 6.6 MAF every year by enforcing efficiency measures—drip and smart irrigation, for example

—statewide. Peter Gleick, the institute's director, is one of many water policy experts who have called for a statewide mandate requiring more efficient farming standards.

Meanwhile, farms have been forced to cut back on water use significantly. In cities, from Sacramento to San Diego, go into any business or home and try the tap. Chances are pretty good it still flows unimpeded. But many farms, including the Rajkovichs', have been running on zero water for two years now. Last year, the CVP released no water; similarly, the SWP delivered only 15 percent of its planned allocation in 2014. As a result, about 5 percent of the state's cropland was forced to go fallow, **resulting** in losses of over \$2 billion and 17,000 jobs. This year, the CVP's tap will run dry again, and SWP deliveries will be limited to 20 percent of contracted amounts.



In the past few years, a drought has been slowly strangling California. Low rainfall and record-high temperatures have created a historically devastating climate. Credit: Thomas Winz/Getty

As in any industry, agriculture has winners and losers. The Rajkovichs' almond, cherry and grape plants, put into the ground about eight years ago, were grown with water from the CVP. Their allocation in 2014: zero. This year will

be the same. And while other farmers have been able to tap into the unregulated groundwater basins beneath their land, Rajkovich has had no such luck. “We’ve dug several wells thousands of feet deep, and they are perfectly dry,” he says.

He shows me around what is now an almond graveyard, lined neatly with dead or dying trees. “This will be the second year that it hasn’t been watered, so these trees are, for all practical purposes, dead, even though they have a few green leaves on them,” Rajkovich says. “There is no crop, and there’s no hope for saving them.” So he’s come up with an alternative: Tear the orchards out (if he can book one of the companies that do it—their dance cards are full for the next year) and plant a new kind of farm.

He drives me over I-5 and across the California Aqueduct (“The lowest I’ve ever seen it,” he says). A few miles later, we sidle up to the North Star project, a 600-acre, 60-megawatt solar farm under construction on old, fallow farmland. If you squint your eyes, the rows of photovoltaic cells mounted on their metal poles don’t look that much different from his neatly lined rows of almond trees. Rajkovich marvels that the parking lot is filled with cars. First Solar, the company developing the North Star project, says that it has generated 400 construction jobs that will last through to completion this summer, and that there will be 50 permanent jobs at the site.

Meanwhile, there’s no work to be had on the Rajkovich farm. “We’ve probably lost four or five full-time employees that are here year-round,” he says, “but seasonally we’re going to lose hundreds.” He’s already begun talks with solar developers. “It’s not nearly as lucrative as a full-producing almond orchard is,” says Rajkovich. “However, it’s better than nothing.”

It might also be the future of the Central Valley. Recent **research** suggests that existing infrastructure in California could support enough solar equipment to exceed the state’s current energy demands by up to five times—or

perhaps to supply what's needed for new, energy-intensive development like wastewater treatment and desal plants. The Carnegie Institution for Science team that came up with that calculation found that about 13.8 million acres could be developed into solar farms without affecting the environment. In the past two years, 400,000 acres of California farmland have gone fallow, and now fit the bill.

"My son," says Rajkovich, "will probably be a solar farmer versus an almond farmer. That's the future."

The Data Drought

Everyone up and down the state, from the coast to the Sierra foothills, agrees: There is no magic bullet for dealing with the water shortage, but the state might survive if it can shake off its misguided culture of abundance.

People should stop putting water-intensive landscapes in backyards and local parks, and let the ones here now die a noble death. Those man-made green carpets use about 4.165 million acre-feet of water per year—10 percent of the state's water—and provide little in the way of value. Spain, Italy, South Africa, Chile and Israel have all learned to live without ornamental lawns. Californians can too. "We have to get away from the idea that having a nice lawn is a good thing, and towards the idea that having a nice lawn is a bad thing," says Gleick. "People's preferences and behaviors do change over time; look at seat belts and smoking. We can change the way society values certain things."

Technology will play a key role in the move toward efficiency. The state needs to repair or replace its outdated and aging waterworks with the latest and greatest. It should also consider scalable ways to improve the efficiency of the system at every node. For example, Sacramento could mandate water-efficient plumbing in all new construction. "It's sexier to visit a desal plant than a low-flow toilet," says Gleick, "but we'll get a lot more water at a far lower cost by installing low-flow toilets."

California could also save a lot of water if the water decision makers weren't working blindfolded. Nearly every policy wonk I spoke with told me that the key to a water-secure future in California is better monitoring and reporting requirements. We need to, at the very least, get up to the standards that other water-poor countries have set.

"I can tell you right now the state of every major [water] storage facility in Australia, in my app on my phone," says Marcus. Contrast that with California: Sacramento has little idea how water is used in far-flung parts of the state where local water managers act in response to the local needs of their constituents, and not necessarily to their neighbors. Among the most important missing data is how much water is being diverted from surface waterways, like the California Aqueduct, and groundwater aquifers.

"If California knew what Californians know about water, management and policymaking would be much easier," write the authors of a recent **Public Policy Institute of California report**. For years, the state didn't have to; there was always enough water to go around, and when there wasn't, there was always that eternal California confidence that there would be rain on the way. But, as Hanak says, "we don't have the luxury anymore of getting by with slop in the system."

The goal of Jerry Brown's executive order, combined with the Water Supply and Reliability section of last year's **\$7.545 billion water bond** and the **2014 Sustainable Groundwater Management Act**, is to end this carelessness. They require improved water-use reporting throughout the state and stricter penalties for water misuse and abuse. They also create incentives for efficiency and set aside significant money for investment in water innovation.

There's no way to predict if all these sticks and carrots will help, but there is plenty of Golden State optimism that the state isn't done for yet. As we drive through Yolo County, where 90 percent of the country's canned and

processed tomatoes are grown, Marcus is telling me that the current Water Resources Control Board is ready to get things done. “Some folks call us the dream team. Other folks are probably terrified of us. But the bottom line is, we’re problem solvers and our driving force is to make decisions. I know perfect is the enemy of the good.”

Then she points across my chest, and I turn to look out the driver’s side window at what looks to be a newly planted orchard, rows of fruit trees just a foot or two high. Marcus apologizes. “Sorry, I want you to watch the road,” she says, “but I didn’t want you to miss the baby trees.”



Chris Graythen/Getty

THE TWISTS AND TURNS OF NASCAR DRIVER KURT BUSCH'S BREAKUP

**A NASCAR'S VERSION OF THE RAY RICE EPISODE
INCLUDES CONGRESSMEN, A PLAYBOY PLAYMATE AND
A WOMAN WHO MAY OR MAY NOT BE A PROFESSIONAL
KILLER.**

“She just said that she’s a mercenary and that she killed people for a living.”

With that line, what should have been a routine family court case blew up TMZ and every major sports website in America. Kurt Busch, a top NASCAR driver GQ ranked the third most-hated athlete, was recalling the night he met Patricia Driscoll, his ex-girlfriend. He was in family court in Delaware because Driscoll claimed he had choked her and bashed her head into a wall in September 2014 and she was seeking a no-contact order. But on the witness stand, Busch was the one lobbing accusations, claiming he wouldn't have dared assault Driscoll. "I knew that she could take me down at any moment," he said, "because she's a badass."

He added that Driscoll went on covert missions in Africa and South America and had been hired to slay drug traffickers. Once, he said, she showed up at their hotel room in El Paso, Texas, wearing a trench coat over a blood-soaked evening gown. "It gave me every reason to believe that this was an operative that worked in the underground of the military," he said under oath. "Everybody on the outside can tell me that I'm crazy, but I lived on the inside and saw it firsthand."

Busch never used the words "trained assassin" to describe his ex—that was said by someone else called to the witness stand—but the tabloids pounced on that term, in part because the claim made Busch sound unhinged and desperate. People were already comparing him to Ray Rice, and NASCAR executives were scrambling to avoid a PR nightmare like the one that had rocked the NFL last year, when surveillance video that showed Rice knocking out his fiancée in a hotel elevator went public.



Kurt Busch and girlfriend Patricia Driscoll attend the college basketball game between the Arizona Wildcats and the Arizona Wildcats at McKale Center in Tucson, Ariz. on January 16, 2014. Credit: Christian Petersen/Getty

Driscoll, who sells sensors to the government and runs a nonprofit for struggling veterans, now mocks her ex's claim. "I'm 5 foot tall. I've never worn a trench coat in my life. It would drag on the ground.... But the bloody ball gown? You're sitting there thinking, What movie were you watching last night? Or what crack are you smoking right now?"

She says Busch plucked the assassin idea from a screenplay she wrote, called *Enigma*, "about a female CIA operative, so kind of like the female Jason Bourne." Someone who knows both Driscoll and Busch said in materials submitted to the court that Driscoll had told him *Enigma* was based on her life.

But there's another Hollywood film that might be an even better model here, says one former friend of Driscoll: "If there was ever a movie written about her, it would be *Gone Girl*."

‘Very Pale and Crazy’

Their four-year relationship was going south, fast. Kurt Busch had been driving well for much of the 2014 NASCAR season, but whenever he slipped in the ranks, he blamed his lover, Patricia Driscoll. She was too controlling, he later said, and she kept him away from his team. After one particularly bad race, he broke things off with her. Five days later, on September 26, 2014, she texted him: “I hope you’re OK.” His response troubled her: “I’m crying laying on the floor,” he wrote. “I don’t know which way is up.”

“I love you,” she wrote.

“I know, but I don’t know if I do. I don’t love anything right now,” he texted back. He said he felt like the world was “down on top of me.”

Having worked with veterans struggling with post-traumatic stress disorder (PTSD), Driscoll says she is attuned to the clues of people toeing the ledge. So when she got those texts, the diminutive blonde put her 9-year-old son in the back of her white Range Rover and drove 90 miles from Maryland to Delaware to check on Busch.

Dover International Speedway has an enormous parking lot for drivers’ fancy motor homes in the middle of the racetrack. (People call it “the million-dollar trailer park.”) Busch was there that night, prepping for his next race, in two days. At around 10 p.m., the guard let Driscoll through the security gate (she still had her NASCAR full-access card). She parked outside Busch’s motor home, punched in the key code for the door and entered with her son. She found Busch at the back of the bus, in his king-size bed, naked. What happened next is in dispute, but according to what Driscoll said in court, Busch greeted her with, “Why the fuck are you here?”

“We’re here because we love you and we care about you. Are you OK?” she said.



Kurt Busch takes part in pre-race ceremonies for the NASCAR Sprint Cup Series FedEx 400 benefiting Autism Speaks at the Dover International Speedway in Dover, Del. on June 2, 2013. Credit: Geoff Burke/Getty

She said she told her son to wait in the other room and that Busch called her a “psycho” and looked “very pale and crazy.” He said if he had a gun he would shoot himself.

Busch then told Driscoll they were through. Wanting to “call his bluff,” she told him to go break the news to her son. “He jumped up from the bed, grabbed her throat with his left hand, placed his right hand on her face with his thumb near her chin and his fingers near her left ear, then strangled her while he smashed her head into the bedroom wall” three times, according to court documents. She said she “couldn’t breathe” and felt like Busch “was crushing her throat.”

When asked by his lawyer if he assaulted her that night, Busch responded, “Absolutely not.” She wanted to ruin his image, he said.

‘Can You Get This Motherfucker Out of My Face?’

“If you’re a Kurt Busch fan, you deal with a lot,” says Cinde Trebesch, who has run a fan club for the driver since 2005. “You deal with people booing you. You deal with

people pouring beer on you in the stands. You deal with a lot of harassment because of all the controversy he's been through."

Busch was a winner and a loser in NASCAR almost from day one, great behind the wheel—except when he was very, very bad. He made the pro circuit in 2001, and his first big chug of trouble came the following year, when NASCAR fined him \$10,000 for bumping a car during a race. He had several more flare-ups with drivers, and in 2005 police pulled him over on suspicion of drunk driving. They only cited him for reckless driving, but news spread that he hadn't played nice with the cops. (Police said Busch asked, "Do you know who I am?" and told them he would not be doing the "gay-ass" field sobriety test.) His race team suspended him for the last two races of the season and said they were "retiring as Kurt Busch's apologists."

In 2007, NASCAR fined him \$100,000 and put him on probation after he nearly drove head-on into another driver's crew member following an altercation with that driver during a race.

In February 2011, Busch separated from his wife of five years, but that didn't seem to cool his fire. That September, during a press conference, an Associated Press reporter asked him to comment on something nasty he had said about a competitor. "I didn't say that tonight. Did not," he responded. When the conference ended, the reporter offered him the printed transcript; he tore it in two and threw it in her lap. Two months later, while waiting to go live on-air with an ESPN reporter, he said, "Can you get this motherfucker out of my face?" For that and for giving the middle finger to a crew member that same day, NASCAR fined him \$50,000.

Busch announced in December 2011 that he would see a sports psychologist to work through "personal issues." The following spring, NASCAR put him on probation and fined him \$50,000 after he ran into a car in the pit and had to

be restrained from fighting the driver's crew. Months later, when a Sporting News reporter asked how the probation was affecting his driving, Busch replied, "It refrains me from not beating the shit out of you right now because you ask me stupid questions."



Kurt Busch walks with his girlfriend Patricia Driscoll, after arriving to compete in a NASCAR event in Concord, N.C., May 17, 2014. Credit: Terry Renna/AP

From early on in their relationship, Driscoll, whom he met at a veterans' event in September 2010 and began seeing in the months following, knew Busch had to learn to shut up and sit down. "That kind of anger will eat you up," Driscoll said in a 2012 documentary about his career. She later testified in family court that during that time, Busch turned his anger on her and once assaulted her. "You pass it off...as a drunk incident," she says now. She recalls telling Busch, "If you quit drinking, get back on your meds and you go see the psychiatrist, I will continue my relationship with you." (A publicist for Busch's racing team declined to make him available for an interview, and Busch testified that the incident Driscoll is referring to never happened.)

In 2012, Busch and his team decided to turn his reputation into a marketing opportunity. They introduced a nickname—the Outlaw—and slapped it on his car and merchandise. “I’m done fighting the battle,” he said in that 2012 film. “My image is what it is.”

For a while, he seemed to have his anger under control. But after several disappointing performances, halfway through 2014, Driscoll says, “He just quit exercising and started drinking again, and it was a downward spiral pretty quick.”

Their relationship crashed soon thereafter. On September 21, 2014, after a race at New Hampshire Motor Speedway, the couple fought in a Hertz rental car. Busch, upset about his finish, ripped the rear-view mirror off the windshield, cracking the window, and Driscoll later testified that he bruised her leg as he threw the mirror in the backseat. They fought during the 90-minute drive to Boston’s Logan International Airport, and he broke up with her on the way. She also said he pulled the seat belt around her neck and then let it go, which he has denied. At a fork in the road, somewhere between “Departures” and the “Rent-a-Car” return, he pulled over. When he got out of the car, she hopped into the driver’s seat and sped off with his luggage.

He texted her after she pulled away: “bye forever.”

‘I’m Going to Ruin Him’

After fleeing from Busch’s motor home that night in Dover, Driscoll and her son stopped at a nearby acquaintance’s to tell him and his wife what had happened and then drove back to Maryland. She spent the drive frantically phoning friends. Some of them couldn’t understand what she was saying because she was sobbing so hard. Back home, at around 1:30 a.m., she invited over a neighbor, who later testified that Driscoll’s neck was red, suggesting she’d been choked.

Driscoll says she barely slept that night. At one point, she went over to a mirror and examined her neck, where she says bruises were starting to appear. She took photos and says she thought about how a friend had died at the hands of a man. She told herself: No matter what he says to you, sweet talks you, this is the end.

One person she called that night was Richard Andrew Sniffen, a minister who has known the couple since around 2012. Sniffen says when they first spoke after the breakup, Driscoll sounded heartbroken and hoped she and Busch would get back together. But that hope faded quickly, and “any emotions of wanting to reconcile...immediately turned to revenge,” he says. “She made very specific comments about getting him out of the car and attacking his career so that he would never be able to drive again.”

Jonathan Helfman, who worked in marketing with Driscoll and Busch and was friends with both of them, told Busch’s lawyers in documents submitted to the court that after the breakup she said, “If he thinks he can just walk away, turn his back on me and [my son], he is going to regret it for the rest of his life.” In late October, she allegedly told him, “It can’t be over, but if it is, I’m going to ruin him. ... You don’t know what the fuck I’m capable of.”

“We said move on,” says Beverly Young, who until recently was the namesake of a fund awarded by Driscoll’s nonprofit. “You’re smart, you have money, you have a business, move on before you get into trouble. And she started with all of these accusations, and it kept getting deeper and deeper.” Driscoll considered the Youngs her adoptive family, but, “She wouldn’t listen to us,” says Young, who flew up from Florida to see Driscoll the night after the alleged blowup in Busch’s motor home.

On November 5, 2014, about six weeks after that incident and the day after the midterm elections, when all of her Washington friends were preoccupied,

Driscoll went to the police and then filed for an order of protection.

The story broke on November 7. Busch retained Rusty Hardin, a Houston-based lawyer with a Southern drawl who has become the go-to attorney for sports stars accused of doing bad things, including Roger Clemens and Adrian Peterson. Hardin denied all of Driscoll's allegations.

The family court judge, Commissioner David Jones, held four hearings in December and January. On the witness stand, he would later write, Driscoll seemed "genuine" and "her throat muscles appeared to contract, as if she were re-experiencing the alleged strangulation." Busch's testimony painted Driscoll as a crazed ex who broke into his trailer while he was sleeping and refused to leave. He said he only "gently cupped her cheeks with his hands."

Jones didn't buy Busch's testimony. He later wrote that the driver "appeared to have memorized his version of events," and he also discredited people who testified on Busch's behalf, saying they had financial ties to the driver. But several of them point out that they have money tied up with Driscoll too. "I'm at least one person that knows absolutely for a fact what her intention and motives were," Sniffen says about Driscoll. "She was basically poised to destroy his career, his character and his finances."

'Evaluated for Mental Health Problems'

On February 16, Jones granted Driscoll the order of protection from abuse. Busch would not only have to keep away and not contact her, but he'd also have to "be evaluated for mental health problems related to anger control and impulse control" and follow any recommended treatment.

Within days, and just before the Daytona 500, Chevrolet dropped its sponsorship of Busch and NASCAR suspended him indefinitely.

On February 19, Hardin filed to reopen the case and had a list of new people willing to testify on behalf of his client, including Jonathan Helfman and Beverly Young. On March 5, the Delaware attorney general's office said that after reviewing the police findings, it would not pursue a criminal case. A few days later, NASCAR reinstated Busch. Chevrolet also took him back.

The news devastated Driscoll. "To find out magically he's cured, he's reinstated, it just doesn't make sense to me," she says now. The decision also irritated victims' advocates. Kim Gandy, president and CEO of the National Network to End Domestic Violence, wrote to NASCAR, expressing a "deep concern regarding your organization's position on domestic violence.... Your decision to abandon your suspension sends the wrong message on this important issue."

Back behind the wheel in March, Busch again proclaimed his innocence. "It means the world to me to be back in the car," he told the press. "It's been a tough situation the last few months, and I've gone through this with confidence knowing that I know the truth and that I never did any of the things that I was accused of. It was a complete fabrication."

'I Like to Shoot as Much as I Like to Have Sex'

In Washington, D.C., an intern for the Armed Forces Foundation, the nonprofit Driscoll heads, is navigating the stop-and-go traffic near the Capitol. From the passenger seat, Driscoll sees her iPhone buzz to life with a message from her lawyer: Jones would not be granting the motion to reopen the family court case.

She relays the good news to her PR team in the backseat, but her reaction seems muted, and she changes the subject. She has other things on her mind, like the meeting she's about to have with a senator for Louisiana and two

congressmen to discuss mental health care funding for veterans.

The lawmakers greet Driscoll like an old friend. That's because she's been making a name for herself around the capital for more than a decade. In 2002, she founded a sensors and surveillance company, Frontline Defense Systems, and the following year she became president of the Armed Forces Foundation. She's co-authored a book on soldiers with PTSD, produced a documentary about veterans' issues and increased revenues at the foundation 80-fold. Her foundation has awarded more than \$95 million to military families. NASCAR is one of its sponsors. Busch was a spokesman.

Among her fans is Major General Randall West, who served on her board and says she "had a zeal and an enthusiasm to do the right thing and help as many people as she could." But despite her many high-ranking admirers, the single mom from Texas with no college degree knows she's disliked by some in D.C. and the NASCAR world, and she half-jokingly refers to herself as "public enemy No. 1" in certain circles.



Kurt Busch's ex-girlfriend, Patricia Driscoll, center, leaves Family Court in Dover, Del. on December 16, 2014. Credit: Jason Minto/The News Journal/AP

Driscoll grew up in El Paso, the oldest of three kids. Her dad was in the National Guard, led a teachers union and worked for a defense contracting company. Her mother was a military brat and became a nurse. Driscoll says she was a leader in high school, joining as many clubs and sports teams as she could and becoming one of the first girls in Texas to play high school football.

After high school, she followed a boyfriend, Gilbert Chiquito III, to Cape May, New Jersey, where he was training for the Coast Guard. The two of them married in 1995, a month before her 18th birthday. They later moved to Maryland, and Driscoll attended night school. “I didn’t really fit in with the college crowd. I had different ideas and agendas of what I wanted to accomplish in life, and a lot

of these guys wanted to party and lived off their parents' money," she says. "I was living on my own since I was 17 years old. I paid my own bills. I didn't have my parents paying for college. I didn't have a lot of what other kids had."

The marriage didn't work out. Chiquito could not be reached for comment, but his father and stepmother say that toward the end of the marriage, Driscoll claimed he threw her down the stairs, causing her to have a miscarriage. A former friend recalls her speaking about other violent incidents. Chiquito has always denied that he assaulted her, his father and stepmother say. "She's fabricated a lot of stuff," Sandra, the stepmother, says. "She was a good storyteller."

Driscoll won an order of protection against Chiquito and says now that he stalked her. The police were called at least once, in 1999, when Driscoll claimed he violated the no-contact order and assaulted and harassed her. The case went to criminal court and resulted in a stet docket, meaning if he stayed out of trouble for three years, he would face no charges.

She never finished college and, still only 23, Driscoll married Geoffrey Hermanstorfer in 2001. Also around that time, she founded Frontline Defense Systems and was suddenly in the world of power brokers. In 2003, she testified before Congress that her customers included the White House Military Office, the State Department, the Department of Defense, the Department of Energy, the Federal Aviation Administration, the Coast Guard, the Centers for Disease Control and Prevention, eight foreign governments and "classified sites of U.S. intelligence community."

She and Hermanstorfer had a son in 2004. But their marriage ended in February 2011, and soon after, their custody battle began. In custody documents, Driscoll again alleged that her partner had physically abused her.

Hermanstorfer tells Newsweek those claims are untrue. “It is interesting that Patricia has made similar accusations of the last three men [with whom] she had substantial relationships,” he told Newsweek by email. That custody case remains open.

“I’m not unlike a lot of women of domestic violence; we keep choosing violent partners,” Driscoll says in response. “They want to paint me as a bad guy here just because I keep picking bad people.”

It was around the time of her second marriage that several people who knew her say Driscoll began speaking of her work as a secret hit woman. “She’s been telling people that stuff for years,” says the former friend who likened Driscoll to the Gone Girl character and who did not want to be identified, out of fear of retribution, adding that Driscoll would say it “every single time” she met someone new. “She would start with this story that she had a boyfriend that was running drugs and the DEA asked her to...inform on him and...help them on their missions with Mexican drug lords.”

“She told me the same stories,” says another past acquaintance who has severed ties with Driscoll and feared retaliation for speaking about her. “It’s not like she’s a third-grade kindergarten teacher by day and assassin by night,” this person says, but “she’s talked about that plenty.”

Beverly Young’s son, Billy Young Jr., and a former employee of Driscoll’s also say she frequently talked about being a mysterious operative. And Charis Burrett, a Playboy Playmate whose sister is now dating Busch and who does business with Busch, told the website Kickin’ the Tires and ESPN radio that the second time they met, Driscoll showed her a picture of a man with his head blown off, whom she said she killed. Burrett said Driscoll also lifted her shirt to reveal a scar on her stomach that she said she got on a mission. (Driscoll recently filed a \$10 million defamation suit against Burrett and her husband for various comments she made on ESPN radio and they made on Twitter about

Driscoll being a “hit woman,” in the stomach scar detail. Driscoll says she has no such scar.)

In papers submitted to family court, Helfman claimed Driscoll told him she owned boots with a hidden switchblade and “used them on bad guys.” And Michael Domcheff, who drives Busch’s motor home, told the court that Driscoll talked about being a “trained assassin.”

In a reality show sizzle reel called “Pocket Commando” that a production company made with Driscoll years ago, she says, “I’m not a regular mom.... I’ve worked and supported the military for many, many years. I am one of the few women who own and run a defense company. I like to shoot as much as I like to dance and have sex. I have a reputation for not being the nicest person in the world, and I’ve earned it.” She’s shown at a firing range, wearing a low-cut shirt.

Driscoll adds: “There’s a lot of sensitive things that I work on; most of them you’re never gonna see.”



Kurt Busch sits in his car during practice for the NASCAR Sprint Cup Series AAA 400 at Dover International Speedway in Dover, Del. on September 25, 2009. Credit: Nick Laham/Getty

‘On a Warpath’

At Phoenix International Raceway on March 15, 2015, in his first race back after his suspension for the Driscoll affair, Busch finished fifth. It was his first top-five finish in 12 races. One week later, he finished third. James Edward Yorks, who wrote a recent book about NASCAR, says Busch is in a “resurrection phase...on a warpath to getting back to where he was.”

Traveling with Busch now is a new girlfriend, Ashley Van Metre, the 24-year-old sister of Burrett, who introduced them last November and says Van Metre is “a total polar opposite” to Driscoll, “quiet and on the more submissive side.” The second change: Busch’s car no longer says “the Outlaw.”

Busch’s team has filed an appeal in family court, and Hardin says his client is determined to clear his name.

Driscoll wouldn’t comment on what legal action she might pursue against Busch. “I was attacked on September 26, and the attacks continue,” Driscoll says through tears. “The people who come forward and are brave enough to say, ‘This is wrong’ and report the crime, they should not be continued to be beat up.... He assaulted me. And at the end of the day, we’re just two people. And he is a celebrity, yes, but he is not above the law.”

Her biggest fear, she says, is that victims of domestic violence won’t speak up after seeing what happened to her, including women in the NASCAR community, who she says have contacted her privately. “Too many women stay silent. Your heart gets in the way,” she says.

Still, some people who know both parties in this domestic conflagration say it’s Busch who needs protection. Since this affair is as much Hollywood as it is family court, it’s fitting that the last word here comes from a now-former colleague of Driscoll’s, speaking of her in “Pocket Commando”: “If you cross her, she’ll grab you by the [nuts] and twist them, tear ’em right off.”



Chris Keane/Reuters

RUBIO, PAUL AND CRUZ: ATTACK OF THE FRESHMAN SENATORS

THE NEWBIES ARE BETTING VOTERS CARE MORE ABOUT IDEAS AND PASSION THAN TIME IN OFFICE

With his beautifully coiffed hair and gunslinger bravado, Rick Warren was once considered a strong contender for the 2016 Republican nomination. But these days, Warren, despite having improved his campaign style since 2012, has fallen off just about everyone's short list for president. So

earlier this month, at an event in New Hampshire, he seemed peeved as he made the case for his candidacy. Having spent 14 years as governor of Texas, the 65-year-old chose to emphasize the biggest notch on his cowboy belt: experience. Taking thinly veiled shots at some of his younger rivals, Perry asked reporters, “Do you want to take a chance on someone who doesn’t have an executive track record of being an executive?”

An Air Force veteran, Perry then went into this-is-your-pilot mode. “If you’re flying from Boston to London, [do] you want to be flying with somebody who gives a heck of a good presentation on aerodynamics and why the airplane stays in the air, that has you on the edge of your seat with excitement because they’re such a great speaker...but they got 150 hours of flying time?” Perry asked. “Or do you want to be with that grizzled, old, 20,000-hour captain who’s taken that airplane back and forth thousands of times safely?”

Even when they’re grasping for zippy metaphors, few presidential candidates boast about being “old” or “grizzled.” But when it comes to experience, the candidates work with what they’ve got. What’s frustrating for Perry and some other seasoned politicians is the ascendance of three upstart, freshman senators—Ted Cruz, Marco Rubio and Rand Paul. All are running as party renegades, and all have a plausible path to the nomination.

With few exceptions, such as Bobby Kennedy in 1968, freshman senators tend to wait their turn before making a serious run for the White House. Lyndon Johnson spent 23 years making backroom deals in Congress before his brief, failed bid at the convention in 1960. Bob Dole logged 18 years in Congress before making a short-lived bid in 1980 and wasn’t a serious contender until 1988. So why are we seeing so many first-term senators jumping into the race? Blame Barack Obama, who in 2008 leapfrogged his way to the Oval Office. At the time, Obama, a 47-year-old first-term

senator, defined the experience gap. Compare his résumé to that of Joe Biden, who, for 16 years, idled in Congress before making his first presidential bid, in 1988.

Another major factor: the Tea Party. Since its emergence amid the economic wreckage of 2009, the right-leaning group has grown in numbers and influence, propelled by the belief that the Washington establishment is unfit to govern. Ever since, the fickle American public has been waffling between the feeling that all politicians suck and a desire to elect someone with a proven track record. “At one time, a Ted Cruz couldn’t get the money or the party would keep him in check,” says Samuel Popkin, a political scientist and former campaign consultant. This year, Popkin adds, “experience can tarnish,” a candidate. Which means few in either party want to spend decades sitting in all those yawn-inducing subcommittee hearings.

BETTING ON A BEGINNER

Part of the reason American voters have been vacillating over experience in recent years is the nature of presidential politics. We’re not a parliamentary system in which seasoned party leaders wait for their chance to become prime minister. Every candidate is free to define who they are, separate from their party. Sometimes the results are amusing. Post-Watergate, former Georgia Governor Jimmy Carter highlighted his outsider status but also tried to bolster his experience creds, claiming he governed “the largest state east of the Mississippi.” (By that square-mile standard, we should elect Sarah Palin. Or any other Alaskan politician.)



U.S. presidential candidate and former Secretary of State Hillary Clinton (R) holds Molly Morse as Caron Morse (L) takes a photograph inside Kristin's Bistro & Bakery while she campaigns for the 2016 Democratic presidential nomination in Keene, New Hampshire April 20, 2015. Credit: Lucas Jackson/Reuters

This year, the leading candidates are Jeb Bush and Hillary Clinton. Both have plenty of experience, but because of their ties to past presidents, and the baggage that comes with it, both have to find a way to tout their accomplishments without seeming as if they're from the Pleistocene era. In her **introductory 2016 campaign video**, released in April, Clinton made no mention of her career highlights and no reference to her experience as first lady, senator or secretary of state. Rubio, in his announcement speech, dubbed Clinton a candidate of “yesterday,” and his call for generational change was widely seen as a dig against Bush.

In previous decades, the bar for experience tended to be much higher, as the public held politicians in higher esteem. Richard Nixon ran on experience in 1960, but his young opponent, John F. Kennedy, had spent 14 years in Congress—more than Cruz, Paul and Rubio combined. Candidates

with no previous electoral experience, such as Herbert Hoover and Dwight Eisenhower, had achieved national fame for leading disaster-relief efforts and helping to win a world war, respectively. Woodrow Wilson's electoral experience consisted of just two years as governor of New Jersey, so he was the exception.

In general, voters put more weight on experience in good times and less weight on it in bad ones. In 2008, the Pew Research Center asked voters what word came to mind when they heard the name "Barack Obama." "Inexperienced" was the most common response. That should have been problematic for the young politician. But because of the economy's free fall, voters decided to gamble on a relative neophyte.

As Obama approaches the end of his second term, the economy has improved. But the barrier for entry is still low, especially on the Republican side, where the Tea Party anti-incumbent ethos is strong. Five years ago, Paul was an ophthalmologist in Kentucky. Cruz and Rubio had experience on the state level, but nothing approaching Obama's national profile. Both wound up knocking off favored, establishment candidates in their Republican primaries, then easily winning in the fall. It helped that the Tea Party frowned on Washington lifers and lauded citizen legislators. The lesson politicians took from the experience: Waiting is for suckers. With an electoral tableau of voters still feeling insecure, the newbies have a lot going for them.



Supporters of U.S. Sen. Rand Paul at the D.W. Diner in Merrimack, N.H., April 18, 2015. Credit: Ron Haviv/VII for Newsweek

BALLS OVER BILLS

The rise of these rookies is clearly frustrating to Washington stalwarts. Case in point: Rick Santorum, the former Republican senator from Pennsylvania. In the 1990s, Santorum was young man in a hurry, much like Rubio today. But compared with the three freshman candidates, Santorum is Daniel Webster, not because he's ancient—he's only five years older than Paul—but because he sees the Senate as a place where you work your way up and try to pass legislation. Asked about the freshmen senators making presidential bids, Santorum told Newsweek that being president shouldn't require "on the job training."

Unlike their predecessors, the three freshmen aren't running on their lack of experience, nor are they trying to inflate their congressional records. As the 2016 election approaches, the notion that "I-passed-HR 2134" seems increasingly quaint. Voters don't seem to care about bills, and in the scrum of Republican primaries, where an

instigator can count on as much funding as a legislator, there's no benefit to relying on your record.

For Cruz, who two years ago stymied the Senate with a hopeless Obamacare filibuster, what makes him qualified is less about passing bills than about having the cojones to stand up to Congress, even if his principled stance was both costly and doomed. A self-styled “courageous conservative,” he told Fox News that the best thing he's done in the Senate is “stopping bad things from happening.” On the other hand, Rubio, a former state legislator, has been a more traditional senator. Paul has built some interesting coalitions across party lines. But all three are running as insurgents, not lawmakers.

Political scientists have long argued about what kind of experience makes a good president. They've looked at time in office as a predictor of success and haven't found much of a relationship. The venerable Abraham Lincoln had just one term in the House of Representatives. Richard Nixon's bloated résumé included the House, the Senate and the vice presidency, and he wound up turning the Oval Office into a criminal enterprise. Business experience doesn't seem to be a good indicator of a president's economic success. Look at agri-businessman Jimmy Carter or mining executive Herbert Hoover.

Which is why Perry's argument about experience—and Cruz's emphasis on his lack thereof—is perhaps less relevant than voters tend to think. As John F. Kennedy once put it, “There are no guarantees that if you take one road or another that you will be a successful president.”



Gleb Garanich/Reuters

TONGUE-TIED ON UKRAINE'S FRONT LINES

**AS THE FIGHTING IN DONETSK CONTINUES, SO DOES
THE BATTLE OVER UKRAINE'S NATIONAL LANGUAGE.**

Three years ago, well before the war in Ukraine began, Roman Matys was shopping at Tommy Hilfiger in downtown Lviv when a sales clerk offered him a customer loyalty card. As Matys read the registration form, he noticed it was in Russian. Like most people in Ukraine, he speaks

the language, but the principle of the matter annoyed him. The country has only one official language—Ukrainian—so Matys complained to the clerk, who told him the forms came from the company’s head office in Odessa. There was nothing, the salesman said, he could do about it.

It wasn’t the first time Matys, a business consultant, had complained about companies using Russian on commercial documents in Ukraine. But that afternoon in Lviv, something clicked. Matys started I Tak Poymut, a nongovernmental organization dedicated to promoting the Ukrainian language. The name, which translates to “They’ll Understand Either Way,” is a sardonic reference to the phrase Matys often hears when he points out all the Russian-language labels, pamphlets and electronic operating systems to companies in Ukraine. “They say, ‘Yes we know there are Ukrainian-speaking users, but what’s the problem? Everyone understands [Russian]. Why should we bother?’”

His efforts to promote Ukrainian are part of the country’s larger struggle against Moscow. But here in this former Soviet state, many still prefer to speak Russian. Almost a year ago, when fighting began in eastern Ukraine, pro-Kremlin news outlets used the battle over language to strengthen support for separatism in predominantly Russian-speaking parts of the country. Today, the war has left more than 6,000 dead, and as the conflict continues, so too does the battle over Ukraine’s national language.

“Throughout our history, Ukrainian has always lost out to Russian,” says Tatyana Portnova, a history professor at Dnipropetrovsk University, in eastern Ukraine. “Some people believe that if we don’t nationalize everything—like schools, literature, TV and public spaces—we will lose again. And the consequence will be a Russian intellectual and political invasion.

IT’S ALL ABOUT THE RUBLES

In 1996, well after Ukraine’s independence, the country made Ukrainian its national language. There hasn’t been

an official census here since 2001, but at that time, 67.5 percent of people called Ukrainian their native language, compared with 29.6 percent who favored Russian. The major cities tend to be bilingual, except those in the southeast, which are mainly Russian-speaking, while people living in the countryside predominantly speak Ukrainian. Parents can choose to send their children to Ukrainian- or Russian-language schools, but most students take their final exams in Ukrainian, which is used in universities.

Russian, however, still dominates most newspapers, popular television shows and businesses. And Matys would like to change that. His organization, which has more than 9,200 Facebook members, is launching social media campaigns to demand Ukrainian-language advertising, and it takes companies to court for refusing to comply.

Consumer protection laws safeguard the rights of buyers to access information and products in Ukrainian. But the laws are written vaguely, and few companies seem to care. The main reason: rubles (or, I should say, Ukrainian hryvnias). Often, Matys says, international businesses want to save money in the former USSR states by running their offices out of Moscow and printing instruction manuals only in Russian. Violators are supposed to receive steep fines, but enforcement is scant.

“In the majority of cases, the people who are on top of the government pyramid, who are in charge of the watchdog process, are themselves mostly Russian-speaking, and so to them, this problem seems contrived,” Matys says.

He and his cohorts tend to make their demands to a company’s corporate office in Ukraine. The easiest sell, he says, was Toyota, which responded quickly and without protest in 2012. Today, it has a Ukrainian-language website and offers Ukrainian in its cars’ electronic control panels.

Other companies haven’t been so accommodating. Three years ago, an activist ordered a Samsung washing machine online. When the vendor delivered it, the machine’s

labels were in Russian. The activist returned it and received a refund. But he still wanted a Samsung machine with Ukrainian labels. Getting one proved to be difficult, as neither Samsung's local office in Ukraine nor its regional headquarters in Moscow would explain why it wasn't possible, Matys says. The case went to court, and Samsung eventually caved. The company, which declined to comment in time for publication, now labels the devices it sells in Ukraine in the country's national language.

‘NO ONE WAS LISTENING’

When Matys first started I Tak Poymut, he often felt as if no one was listening. When they did listen, they often laughed at him. But in the winter of 2013, as thousands gathered in Kiev's Independence Square, demanding economic integration with Europe instead of Russia, Matys's ideas no longer seemed so crazy. As the demonstrations continued, Ukraine's security services began a violent crackdown, which many believe had the Kremlin's blessing. The protesters eventually forced the resignation of President Viktor Yanukovych, a pro-Russian leader. But as a new government in Kiev took over, Moscow began to use private television and social media to fuel separatist sentiment in Crimea and eastern Ukraine. Before long, what began as mere protests turned into an all-out rebellion by pro-Russian separatists, and many in Ukraine became suspicious of Moscow's meddling.

“People realized that we have a real enemy,” Matys told Newsweek, “and this real enemy speaks in Russian. Companies are much easier to contact now and understand the crux of the problem.”

The government also seemed on board. Last February, after Yanukovych fled the country, the Ukrainian parliament repealed legislation allowing Russian to be used as an official regional second language. Though Ukraine's then-interim president, Oleksandr Turchynov, vetoed the measure, alarmist reports from pro-Kremlin media outlets

unnerved the country's predominantly Russian-speaking East. Later, in August, Ukraine blocked 14 Russian channels from cable TV for "broadcasting propaganda of war and violence." This year, in early April, the country outlawed Russian TV shows that glorify Russia's security services.

For Matys, these bans were a matter of utmost importance. But not everyone feels good about surging Ukrainian nationalism. Vladislav Breeg, editor-in-chief of the pro-Russian website [Novorossia Today](#), believes that much of the debate over language and patriotism is just a way for the new government to distract the masses. "Different people came to power," he says. "But the economy and corruption remained the same."

As the war has worn on, Matys says, his efforts have become more difficult. But not for the reasons that Breeg describes. Instead, many in Ukraine would now like to find common ground with their friends and neighbors. Among them is Joseph Zissel, a professor of Jewish Studies at the National University of Kiev-Mohyla Academy. Many of the participants in the Kiev protests, he says, were ethnic Russians who are also proud Ukrainians, a sign that the country is less divided along linguistic or ethnic lines.

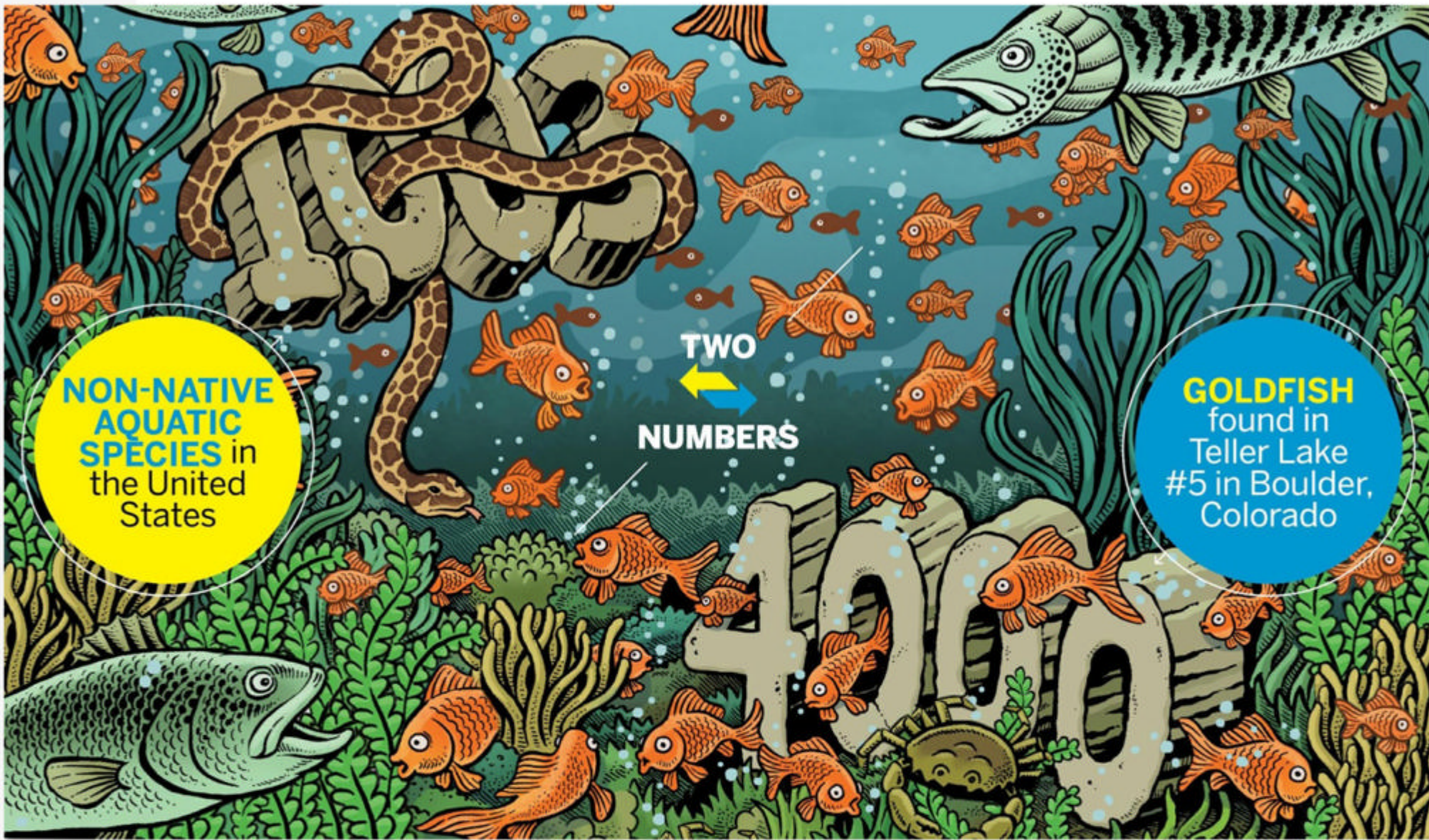
"We always thought...language was the major sign of identity," says Zissel. "It turns out it isn't. Every day on TV there are interviews from the front line, soldiers and officers, many speaking Russian" and fighting against the separatists.

For Matys, the country's new push toward inclusivity has become difficult to overcome. And though the government appears firmly on his side, consumers and business leaders seem unsure. They don't want to alienate pro-Ukrainian Russian speakers during a time of war.

Matys, however, isn't giving up. "I'm not interested in which language you speak at home or which language you're more comfortable with," he says. "Maybe someone knows Swahili well and prefers to speak in it. That's his

choice. The question is about national security and national identity.”

Sarah Topol’s travel in Ukraine was supported by a grant from the Pulitzer Center on Crisis Reporting.



Mario Zucca

TWO NUMBERS: A PLAGUE OF GOLDFISH

**A HANDFUL OF PETS DUMPED IN A COLORADO LAKE
TURNED INTO 4,000, AND IT'S NOT PRETTY.**

“Someone just didn’t want their goldfish anymore. We don’t think there was malice intended, but now we have 4,000 goldfish. And that’s an issue,” says Jennifer Churchill, public information officer for Colorado Parks and Wildlife, adding that Teller Lake No. 5, a 12-acre expanse of water near Boulder, was overrun with the county fair critters.

Aquarium dumping has led to several exotic aquatic species being introduced to ecosystems in which they don't belong—perhaps most notably the Burmese python in Florida's Everglades.

The United States Geological Survey **has reported** that 1,003 non-native aquatic species have been introduced into various bodies of water across the country. (Some of these species may have been eradicated, though it would be impossible to check every body of water to confirm, said Matt Cannister, a fish biologist.) Of that total, 688 are fish, with frogs, turtles, snakes, shrimp, crabs and mussels filling out the list.

It's not clear exactly how many of those 1,003 non-native species are considered invasive—defined by the United States Fish and Wildlife Service (FWS) as species that harm the local economy or human health. The agency says it lacks the resources for such detailed research. Some known invasive species are zebra mussels, which can clog pipes and cost millions of dollars to remove, and European green crabs, which both outcompete New England soft-shell clams and prey on them. The soft-shells, a highly valuable seafood product, have withered as the green crabs have thrived.

Goldfish aren't wreaking havoc on human health or finances (yet)—but they are throwing off the delicate balance of an ecosystem. “Any species that ends up in an ecosystem in which it did not evolve, it doesn't have all the checks and balances that affect the creatures who occur there naturally,” said Don Maclean, an FWS biologist. “This non-native animal, like a goldfish, might not get preyed on as much; diseases and parasites don't bother it as much. These are all qualities that help them reproduce faster and better. When that happens, the non-native species is eating more while the native species are struggling for food.”

To rid Teller Lake No. 5 of the goldfish, Colorado Parks and Wildlife authorities are considering electrofishing,

basically zapping all of the fish with a jolt of electricity. The stunned fish float to the surface and can be removed.

Churchill has received dozens of calls from locals asking if they can take the goldfish home as pets, but she believes that would set a bad precedent. Instead, Colorado Parks and Wildlife will donate the goldfish to a bird of prey rehabilitation center, where they will be eaten.



Agoes Rudianto/Barcroft Media /Landov

APPS AGAINST ISIS: INCUBATOR SEES POWER IN SOCIAL MEDIA

**FROM HACKATHONS TO APPS, TWO ENTREPRENEURS
ARE TRYING TO COMBAT ISIS'S SLICK SOCIAL MEDIA
STRATEGY.**

Updated | In the early hours of February 17, three teenagers from East London **slipped out** of their parents' homes and caught a flight to Istanbul. After arriving, they

waited for 18 hours at a Turkish bus station before crossing the border into Syria. The Islamic State, better known as ISIS, had successfully lured them into a war zone.

The three teens aren't the first foreigners to join ISIS, and they won't be the last. According to **recent estimates**, roughly 20,000 foreigners have joined the conflict in Iraq and Syria. Of those, **3,400** are from the West, and many are **young Muslims**. Driving this recruitment effort is ISIS's **slick social media campaign**, which features selfies with cats and beheading videos, among other things. One of the teenagers, Shamima Begum, had even **communicated** with an ISIS recruiter online before leaving for Syria.

Over the past two years, tech companies and governments have **tried** to counter ISIS's digital strategy, with limited success, so one group is trying something new. It's called **Affinis Labs**, and it's an incubator for startups, founded by Shahed Amanullah, a former senior adviser for technology at the State Department, and Quintan Wiktorowicz, a former senior director for community partnerships at the White House's National Security Council. Their mission is to pull together Muslim entrepreneurs to build social networking tools that help reduce the allure of ISIS.

The incubator is currently working with eight businesses, including a Muslim dating site and a "Kickstarter for Muslims," to develop their ideas, get them off the ground and make them sustainable. The hope is to help Western Muslims find like-minded individuals instead of resorting to extremist groups for a sense of belonging. "All of these businesses peel away a tiny part of the problem," says Amanullah, "It may take a thousand businesses, which are a thousand different aspects of a person's identity, and collectively I think it can push back [ISIS]."

Extremism is one of the more immediate problems Affinis Labs is trying to combat. "Part of the reason [ISIS's campaign] is so effective is because it is organic. It's from

the audience that it is going after,” says Amanullah. “These young people understand youth frustration, they understand the fascination with violence, and they understand that the imagery and graphics that you see in Hollywood will attract these people.”

To come up with new ideas, Affinis Labs holds hackathons all around the world, from Abu Dhabi to Australia. At each event, organizers pose a problem, such as how to make traditional Islamic scholarship relevant to the Twitter generation. Participants then have three to four days to come up with digital solutions. Affinis Labs provides money and assistance to support the best proposals.

So far, the incubator is working on two ideas aimed at combating ISIS. The first is called One 2 One—an app to help identify people using extremist rhetoric and imagery on social media. The next step is for the app’s creators to train a group of young Muslims (the ones who will download the app) on how to steer their peers away from extremism.

The second initiative is a website called “Come Back 2 Us.” Its goal is to create a digital underground railroad for people who want to return home after joining ISIS. The site allows friends and family to post messages to those fighting abroad; the hope is that they’ll trigger an emotional response and convince the recruits to leave. If the foreign fighters change their minds, they will be able to click a panic button and provide information that will then be sent to government contacts who can help them safely return.

The site is completely coded, but Affinis Labs has a few matters to resolve. The creators want to make sure ISIS and other groups don’t target friends and families on the site. They also want guarantees from various governments that fighters who return after pressing the panic button won’t automatically be locked up. Denmark is experimenting with **rehabilitation programs** for ISIS fighters who have decided to come home, while the Netherlands has either barred them

from the country or forced them to wear tracking devices. The United States doesn't have a clear policy.

"We can't convince them to come back when they will just go to jail," says Amanullah. "And I don't think we need to consign them to death or lifetime in jail because they made a stupid mistake." If anything, groups of reformed fighters could be an asset, he argues—they could warn their peers about the dangers of joining radical groups.

While the founders of Affinis Labs view Westerners joining ISIS as an issue in and of itself, they also see it as symptomatic of a deeper problem: There are few well-known places online for young Western Muslims to meet and interact with people from similar backgrounds. "I think a big reason young Muslims are vulnerable [to recruitment]," Amanullah says, "is because no one is defining their identity for them.... On one side you have ISIS using these simple, slick messages, and on the other side you have clerics who stare into the camera and drone on for an hour. And one clearly resonates with young people, and one clearly doesn't."

Wajahat Ali knows this firsthand. The co-host of *The Stream*, a show on Al Jazeera America, used social media to kick-start his career and find a niche with a young Muslim audience, among other viewers. "The online space allows Muslim communities to bypass those institutions, both religious and cultural...that they feel do not represent them," he says. But without a dominant "Muslim Huffington Post" bringing Western Muslim diversity into the mainstream conversation, as Ali puts it, the community is often confronted with villainous or stereotypical portrayals of itself, which can be alienating.

"Having your identity and religion constantly investigated and interrogated would bog down any individual, isolate them, make them feel like 'this country will never accept me' and lead them towards this path of

radicalization,” he says. “But the overwhelming majority doesn’t seek that out...or outright rejects it.”

For now, both he and Amanullah say young Western Muslims in the post-9/11 world are still trying to find their place. And although the Internet isn’t a panacea, it can be part of the solution. “We have a really talented group of people out there,” says Amanullah. “I want to build a [Muslim online] community that has so much going for it, a person doesn't have to leave for some illusory utopia.”



Tom Williams/CQ Roll Call/AP

ON IRAN, THE GOP STUMBLES TOWARD SELF-DESTRUCTION

**MARCO RUBIO AND OTHER REPUBLICAN LAWMAKERS
SEEM EAGER TO TAKE A QUIXOTIC STAND ON THE
NUCLEAR AGREEMENT WITH TEHRAN.**

It was an outlandish act of political theater, and one that resulted in utter failure. In the fall of 2013, the Republican Party decided to take a stand against the Affordable Care Act, President Barack Obama's signature health-care legislation. The GOP's strategy was as simple as it was

quixotic: With a majority in the House, conservative lawmakers refused to pass a bill needed to fund the federal government unless the measure stripped away all money for “Obamacare.” Of course, since the Democrats controlled the Senate, the plan was never going to work. But the Republicans plunged ahead to make their point, even if it meant shutting down Washington.

The shutdown began on October 1. Hundreds of thousands of federal workers were furloughed, causing delays in Social Security checks and new passports. All of the country’s national parks were closed, upending vacation plans from Yosemite to the Washington Mall. Republicans initially celebrated, but before long, opinion polls showed that the public blamed them for the imbroglio, jeopardizing the GOP’s election prospects for 2014. Within weeks, Republican leaders caved and agreed to fully fund Obamacare, along with the rest of the government. The 16-day shutdown cost the economy an estimated \$24 billion.

These days, few in the GOP are talking about a government shutdown, but the party once again may be stumbling toward self-destruction, thanks to some of its most conservative members. The latest clash between the White House and the far right involves Obama’s effort to sign a nuclear deal with Tehran. In March, Senator Tom Cotton of Arkansas and 46 other Republicans sent a letter to Iranian Supreme Leader Ayatollah Ali Khamenei, warning that the next U.S. president could easily abrogate any nuclear deal. And now the GOP is focused on a Senate bill that would prevent Obama from waiving any sanctions against Iran while Congress reviews a final nuclear agreement, which both sides are committed to reach by the end of June. In mid-April, the bill received unanimous approval in the Senate Foreign Relations Committee. The White House even pledged to sign it into law after Bob Corker, the panel’s silver-haired Republican chairman, agreed to soften its language.

In the coming weeks, however, the bill will go to the Senate floor, where Majority Leader Mitch McConnell, a conservative from Kentucky, has pledged in principle to honor rules that allow any member to propose amendments. If a bill passes with provisions that restrict the president's ability to reach a deal, Obama has vowed to veto it. "There is not going to be a whole bunch of poison pills or additional provisions or amendments added to it," the president said about the bill recently. "It's not going to be tilted in the direction of trying to kill the deal." A potential presidential veto would stand, unless Republicans can come up with a two-thirds majority in both chambers. And right now, Obama seems to have the support of enough Democrats to prevent an override, which makes any attempts to meddle with the legislation risky. "If this bill unravels on the floor because of toughening amendments," says Norman Ornstein, a congressional analyst at the conservative American Enterprise Institute, "then the Republicans are going to have a failure on their part."

A Pro-Israel Poison Pill

The temptation to turn Obama's Iran diplomacy into a partisan fight may be hard for the GOP to resist. The nuclear deal has become wrapped up in presidential politics. Marco Rubio has vowed to offer an amendment requiring Iran to recognize Israel—a poison-pill provision Tehran would undoubtedly reject.

Rubio's amendment, which echoes a demand by Israeli Prime Minister Benjamin Netanyahu, may be attractive to McConnell because it would force Democrats to choose between supporting Israel or the White House. "I can see him saying, 'These votes will divide the Democrats,'" says political analyst Stuart Rothenberg. Influential pro-Israel groups, such as the American Israel Public Affairs Committee, have thrown their weight behind Rubio's amendment, adding pressure on lawmakers to vote for it if it comes to the floor.

Analysts see Rubio's amendment as a bid for the support of hard-line, pro-Israel donors such as billionaire casino magnate Sheldon Adelson. Rubio "will be sending copies of his amendment and his Israel position paper to all potential Jewish supporters, as well as his evangelical mailing list, with an appeal to help him defend Israel with their generous contributions," wrote veteran political commentator Douglas Bloomfield in a **column** for The Jewish Week.

The Florida senator won't be the only Republican to offer amendments when the Iran bill comes to the floor. Senator Ron Johnson of Wisconsin, another Tea Party loyalist, wants any final deal to be a formal treaty, requiring ratification by two-thirds of the Senate. Meanwhile, Senator Johnny Isakson of Georgia wants the final nuclear accord to include compensation for the American diplomats taken hostage at the U.S. Embassy in Tehran more than three decades ago. Isakson's amendment captures the deep resentment toward Iran that lingers among many lawmakers.

Dividing Democrats

Congressional experts say all three amendments have a good chance of passing—and drawing Obama's veto—so Corker faces a major test as he tries to shepherd his bill to pass in its current form.

Ornstein, the congressional expert, says it remains unclear whether Corker will be able to dissuade his Republican colleagues from offering their amendments, or failing that, to convince McConnell not to allow them onto the floor. In the meantime, Democrats are bracing for a battle to preserve the current language of the bill. "There may be some horrible amendments that could be offered on the floor," says Senator Barbara Boxer of California. "I'm going to use every tool at my disposal to keep [the bill] the way it is." Other Democrats warn they will stop supporting Corker's bill if Republican amendments undermine Obama's chances for a deal. If that's the case,

says Delaware Democratic Senator Chris Coons, “I would drop off in a second.”

McConnell isn’t saying what he’ll do next. But he has politics to consider. Looking toward the 2016 elections, one of his top priorities is making sure Republicans retain their 54-seat Senate majority. That means giving incumbents—particularly Mark Kirk of Illinois, whose home state has a large Jewish population—the opportunity to show their support for Israel. “Having Democrats divided on issues of Israel and Republicans united behind a strong Israel—he may view letting Mark Kirk vote for something like that as more in his interest than the Corker bill,” says Ornstein.

But analysts also say McConnell must balance political concerns against the possibility that the Republicans come up looking intransigent, or worse, that the party kills an Iran deal and sets the nation up for another war in the Middle East. “If a bipartisan deal gets torpedoed by Republicans,” says Rothenberg, “everyone is going to say... ‘You killed this deal, now what?’” An Obama veto of a toughened Corker bill, followed by an unsuccessful override attempt, would only cement the Republicans’ reputation for overreach.

Compared with the hard choices the Republicans face on Iran, the government shutdown seems almost benign.



John Locher/AP

*RESEARCHER
DISCOVERS HOW
TO RECYCLE
NUCLEAR FUEL WITH
RADIOACTIVE ELEMENT*

**MAKING NUCLEAR FUEL SAFER AND MORE EFFICIENT
BY REVISITING A COLD WAR-ERA DISCOVERY.**

We're all familiar with the lighter elements of the periodic table—the noble gases and mainstay transition metals, such as iron and copper.

The real fun, however, is down at the bottom, among the heavy elements with strange names (einsteinium?) and dangerous radioactivity. The behavior, function and even appearance of many of these heavy metals is a total mystery. Some decay so quickly—a split second—that it's surprising we know they exist at all.

One heavy metal is undergoing something of a renaissance. **For years, californium**—a radioactive element first synthesized by Cold War-era nuclear scientists at the University of California, Berkeley, who gave it its name—has been used mostly as a component in metal detectors. But Thomas Albrecht-Schmitt, a researcher at Florida State University, has discovered new properties of californium that may someday help the United States store and recycle its spent nuclear fuel. In experiments described **last year** and this month in Nature journals, Albrecht-Schmitt disproved common assumptions that there were technological limits and quirks in the way californium bonds with other elements, preventing scientists from manipulating it. The prevailing view was “you can't monkey around with their chemical behavior,” he says. “We've shown that you can.”

“Californium's chemistry is much more like a transition metal, like iron or tungsten or gold,” he says. “With transition metals, we have exquisite control over all their properties.” It turns out that one can bond californium with other elements, make it glow green like kryptonite and maybe even toy with its magnetism. Most important, scientists may be able to use it to extract reusable components of spent nuclear fuel, separating them like “oil on top of water,” he says.

Unlike in Europe, Russia and Japan, where spent uranium is processed and recycled, the 99 nuclear power

plants in the U.S. are “using only a very small fraction of the available energy in the fuel, and then you’re throwing it away and burying it,” says heavy-metal scientist Kenneth E. Gregorich, of the Lawrence Berkeley National Laboratory. That’s partly because fresh uranium is still relatively inexpensive. But storage is risky and costly: the stuff is hot, both physically and radioactively. As Albrecht-Schmitt points out, “What happens if a natural or deliberate disaster occurs at a used fuel repository?”

Someday, the U.S. could join other countries in recycling nuclear fuel, reducing the amount that goes into storage and cutting the need for freshly mined uranium **by 30 percent**. If that’s to happen with californium, scientists will likely need to convince the energy industry that the benefits of recycling outweigh the initial price tag: the 5-milligram dab Albrecht-Schmitt used for his research cost \$1.4 million.



Monica Davey/EPA

THINK FAST: SMARTWATCH SLICES THOUGHT INTO EIGHT- SECOND BURSTS

SMARTWATCHES AND OTHER INNOVATIONS ARE SLICING THOUGHT DOWN INTO SHORT BURSTS. GET USED TO IT.

The Apple Watch's constant notifications are to concentration what a Cinnabon is to fitness. As popular reviewer Joanna Stern **found out** while field-testing an Apple

Watch, the thing can leave you more distracted than a beagle in a squirrel sanctuary.

Early buyers are just beginning to strap on Apple's newest gadget, but ultimately this gizmo and its descendants will have an impact on society that goes far beyond our wrists: The Apple Watch will shrink attention spans like nothing before.

Holding people's attention in a busy media landscape is an old problem—Al Ries and Jack Trout called it out in their famous book *Positioning* in 1976. TV seemed hyper compared with print; the Internet felt like chaos to the TV generation; and now some of our big thinkers mince their brainy theses down to tweetstorms for cellphone screens. Some research shows that our average attention span has **dropped** from 12 seconds in 2000 to eight seconds today. While the intensity of bombardment is already crazy, smartwatches are going to take this to the next level of demand for our attention, since they will be on your body, all the time.

The chief trait of this new tool is that it shrinks your digital activities down into short bursts. Apple's watch puts these notifications in front of you either by flashing something on its face or vibrating on your skin. Interactions with the watch are expected to take no more than eight seconds—quick glances at calendar items or yes/no answers to texted questions. Depending on what you opt into, the watch could relentlessly interrupt whatever else is going on inside your head or in your life.

Such short attention spurts are not intrinsically bad, unless you're a grandfather who wants to grump that when you were a kid a night's entertainment consisted of reading the entirety of *Atlas Shrugged* by flashlight. And anyway, the trend is not going away. Complain as you may, but the bottom line is: Get used to it.

For the next year or so, the pricey and still-clunky Apple Watch will be conspicuously worn by the same types

who a couple of years ago got labeled “**Glassholes**” for peering through their Google Glass lenses. But in time, as the technology evolves and prices drop, some version of a smartwatch will become a significant new tool that infiltrates our lives.

Evernote CEO **Phil Libin** argues that spasmodic interactions with the Apple Watch will actually be more in tune with how our brains work naturally. “Our ancestors weren’t working on a document for six hours,” he tells me. Instead, ancient humans’ attention constantly flitted between finding something to eat and checking to see if something was about to eat them. Libin believes we’ll be more productive if we can handle simple tasks in seconds on a watch. And he may be on to something: Studies show that people with attention deficit hyperactivity disorder (ADHD) are **more creative**. Other **research**, even going back to some Buddhist **writings**, says five to eight seconds is about the amount of time your brain can hold on to one particular thought.

Of course, somebody at some point has to concentrate long enough to design a skyscraper or write complex code—though even there, the trend is toward dividing big tasks into smaller ones and throwing them to Agile development teams. Fading are the days of attacking a major project like a great white shark hitting a seal. Now the approach has more in common with a school of piranha.

In both business and everyday life, we’re about to see the most intensive demand ever on a limited supply of human attention.

The supply of attention can’t keep up. Every human has only 24 hours of possible attention, give or take sleep, and YouTube **uploads** 300 hours of video every minute. As demand for our eyeballs spikes, the value of the supply goes through the roof. If you could buy stock in attention right now, it would be the best investment since **Berkshire Hathaway** in 1965.

Anything that's really good at getting and holding our attention will become far more sought after—and far more valuable. Take, for instance, the Coachella music festival, which just sold around \$80 million worth of tickets for two weekend performance sets in April. It is a veritable magnet for the mind, holding the attention of 100,000 attendees for three days at a time. The amount of attention Coachella controls is so valuable, nearly every band and brand is dying to be a part of it. "It almost matters too much," Flying Lotus, a producer and DJ, **told** The New York Times. "This is one of those festivals where the whole world is watching."

In the age of the smartwatch, Coachella's rare ability to attract attention will become even more remarkable—and more valuable to any entity that wants to make a deep impression. The same will apply to similar events, such as Bonaroo, and major sports events, both live and on television. Or how about Costco? No one can escape a Costco in less than an hour. Its ability to capture so much sustained suburban attention becomes a mega-asset in an age when so many digital retailers have to compete to get you to buy in eight seconds or less.

In a similar way, the value of face-to-face meetings will only rocket. It won't matter how good Skype and Google Hangouts get for video conversations. Meeting live is a serious investment of time and focus, and it will make more of an impression in this new age than it did in any old one.

An interesting question, though: What will a hyperactive smartwatch do to the live meeting? Laptops can stay in bags and phones can stay in pockets, but watches will be right out there on wrists. As early reviewers have found, glancing at a smartwatch is not a deft and unnoticed gesture. In fact, looking at a watch, even just to tell the time, sends a signal of boredom or agita. George W. Bush took a quick **look** at his watch during the 1992 presidential debate against Bill Clinton, and some say it cost him the election. It might

become a sign of deep respect to show up to a lunch date with nothing on your wrist.



Michael Portugal

HOMELESS MILLENNIALS ARE TRANSFORMING HOBO CULTURE

**CHEAP SMARTPHONES AND CHEAPER DATA PLANS
MAKE FOR A MUCH MORE CONNECTED VAGABOND
COMMUNITY.**

On Reddit, he's /u/huckstah, an administrator on /r/vagabond, a subreddit with nearly 10,000 members—many of them identify as “homeless”—who trade skills and

stories. On “the road and the rails,” he’s Huck, and even after we speak twice by cellphone, he tells me he’d prefer I don’t print his real name. “People say, ‘Well, you chose to become homeless.’ But that’s wrong,” he says. Huck says he’s been a hobo for upward of 11 years and started hopping trains and hitching rides at 18. “I did not choose to become homeless. If you want to say I chose to become homeless and sleep on the streets, really all I have to say is fuck you. You’ve never experienced it.”

Or maybe you have experienced it, thanks to the recent Great Recession that caused a spike in homelessness—especially for families—with its tidal wave of foreclosures. And if you have, there’s a good chance you were probably one of the many homeless with a mobile device, a sight that has become increasingly common. The ubiquity of cheap phones and even cheaper data has prompted even longtime homeless to join the growing ranks of people with a cell connection but no house. “The day I started on the road, I had a flip phone, an iPod, a TomTom GPS, an atlas, a laptop, and free Wi-Fi wasn’t very easy to find,” says a medic who’s been a hobo for four years and asks me to identify him as “Nuke.” (“I have a pretty decent amount of training and experience in treating combat trauma.”) He now lives out of a ’91 Ford pickup and says, “I have a smartphone, a laptop, and free Wi-Fi is everywhere.”

The rise of the mobile Internet has made a hobo’s life easier, Nuke says. But when I ask Huck about how he and fellow travelers use their smartphones, I get the sense that even for the digitally connected homeless, life is far from easy. “I keep my phone off a lot, or in airplane mode,” he says, “because we can only charge up for a short time—maybe once a day, or sometimes it will be two to three days between charges, maybe an hour of charge.” For Huck and his fellow itinerants, smartphone usage is measured in instants. “We check Google Maps and then we turn it off, or we make a quick phone call and then we turn it off.”

That's a pity because a smartphone can be even more useful for a homeless person than it is for those with a regular roof over their heads. Case in point: Smartphones provide on-the-go weather forecasts, convenient for an everyday life but essential for a homeless one. "You have to keep an eye on the weather when you're living outside," says Mike Quain, a 22-year-old busker and percussionist. "If it's too cold somewhere, we'll get south any way we can. And no one likes to be surprised by rain. Rain isn't nearly as fun when you don't have a dry place to go."

Piecemeal job-hunting sites like Craigslist are also required browsing if you're trying to make a living with no permanent place to call home. "For the past 100 years of this lifestyle in America, we found our jobs by following seasonal schedules and asking around for jobs at farmers' markets and farming supply stores, looking at job ads in newspapers, asking door-to-door," says Huck, adding that things are done very differently today. "I know thousands of hobos, and I don't know a single one that doesn't use Craigslist. It has completely changed how we find work."

The uses don't end there. Quain lists Google Maps, Couchsurfing.org and HitchWiki as "indispensable for vagabonds," while Nuke is still in awe of his smartphone's power. "I can fit an entire Radioshack from the '90s and then some in my pocket now."

Do a Google search for hobo culture and you'll find a lot about decline: the death of the working-class itinerant, the fall of the Depression-era drifter who never stopped drifting and the end of the heroic hobo celebrated by the likes of the National Hobo Convention in Britt, Iowa. Vice released a documentary in 2012 called *Death of the American Hobo*. Those "graybeards," Nuke will tell you, are on the way out, but there isn't a dearth of culture left in their wake. Itinerants under the age of 35, he says, are forming their own kind of hobo society, one that overwhelmingly keeps up with technology and the times.

Where there used to be “jungles” and “hobohemias,” now the Internet is the place present-day hobos—many of them millennials—go to connect and build a community. Sites little-known among the safely homed—[DumpsterMap.com](#) (a map of dumpsters ripe for diving), [WiFiFreeSpot.com](#) (a list of free Wi-Fi hot spots), [On-Track-On-Line.com](#) (railroad digital scanner frequencies)—are common resources, says Huck, for the vast majority of the digitally connected homeless community. “Prior to 2005 or so, all of this was simply done word-of-mouth, which is how it was done for over 100 years.”

Huck is developing a new hobo code. In terms of the mythology surrounding the homeless, this is a big deal. Read about the romance of hobo culture and you’ll find tons of talk about hobo symbols: a face on the side of a barn means the building’s safe to sleep in; a caduceus on a doctor’s door means the doctor will treat homeless. But for hobos nowadays, that’s all outdated. Huck is part of a project to revamp the code completely and make it more useful for the digitally connected hobo by creating a new set of symbols for things such as “Wi-Fi networks and free outlets.” When I ask if I can publish any of the symbols, though, Huck balks: When hobo codes become commonly known by regulars, it’s a problem. “The codes are for us,” he says, “and if other people see it, they could have clues to our secrets, and the next thing you know, that outlet that was accessible to hobos is now locked up or completely gone.”

Conventional wisdom says the Internet and mobile technology keep us in our own little bubbles, isolated and insular. And while perhaps that’s true for those with homes, Quain says it’s the opposite for hobos. For the itinerant homeless, traveling in groups makes sense for a bevy of reasons: safety, company and economies of scale, especially when it comes to digital devices. “Lots of us travel in groups and share the expense of one phone,” Quain says.

Luckily for Quain and his ilk, the ubiquity of the Internet is making finding fellow “travelers” easier than ever. The curious can head to SquatThePlanet.com and TravelersHQ.org to find vagabonds forming groups, swapping stories and arranging meetings.

Squatters have also enthusiastically embraced the mobile Internet as a means of sharing knowledge—often as a way to fight for their place amid urban real estate development. Frank Morales is a former priest, former squatter and current activist with C-Squat, a squatter advocacy organization in New York. The group works with New York’s homeless men and women who park themselves in unused, often crumbling buildings and fix up the structures in an attempt to turn them into permanent homes.

To do this successfully, squatters need to learn how to bring amenities like electricity and running water into long-neglected buildings—and that, says Morales, is where the Internet becomes indispensable. Where before these skills needed to be shared in person (often at day-long squatter “skillshares”), now they can be digitally transmitted to anyone with a smartphone.

“Technology has really bridged the gap for a lot people around the world who are struggling for housing,” says Morales. Nowadays, activist movements use mass-texting platforms to coordinate occupations of neglected buildings for squatters to use. They also keep email lists that track what squats are in danger and distribute information about new laws that affect squatting. Activist homeless have used digital connections to form a movement that believes, in Morales’s words, “we have a moral obligation as individuals and as a society to support the occupation of spaces that are deteriorating and would otherwise just be rotting away to create housing.”

While no comprehensive survey of homelessness and mobile ownership has been done in the United States, small surveys provide a glimpse of how the trends have grown.

A **study** by the University of Sydney found that 95 percent of Australia's homeless own a mobile device, while Keith McInnes of the Boston School of Public Health's **study** of homeless veterans in Massachusetts found that 89 percent own at least one device. (In Australia, mobile penetration in the general population is **92 percent**; in the U.S., it's **90**.) However, "it's hard to do truly representative studies of homeless persons," says McInnes. For example, mentally ill homeless living under bridges, or in the woods, are probably less likely to have a cellphone and "less likely to be included in survey, because they are hard to find."

But as McInnes points out, those who do possess a cellphone have a tool both for survival—and for restoring their sense of humanity. While settled people are usually able to meet the wider world head-on and feel no shame, homelessness carries with it a pervasive, ugly stigma. "Having a mobile phone provides homeless persons with an outward-facing identity that can mask their homelessness," explains McInnes. "With a cellphone, people you call or who call you don't know you're homeless."

Some, like Huck, have taken this one step further, using their connectivity to promote their lives without a roof and walls as a source of pride. Near the end of our interview, Huck lets me know that he and several others on /r/vagabond have just been featured on an episode of **Upvoted**, Reddit's weekly podcast, where they're celebrated, not stigmatized.

"I've found a way to be homeless without starving or begging or sleeping in ditches," he says. "I've become a professional vagabond, and this is the lifestyle that I love."



Kevin Mazur/WireImage/Getty

*‘MONTAGE OF HECK’
TAKES A SOBERING
LOOK AT NIRVANA
FRONTMAN KURT
COBAIN*

NEVERMIND THE BOLLOCKS: HERE’S THE REAL KURT COBAIN DOCUMENTARY.

Here is a challenge: Find a rock and roll legend with more mythos surrounding him than Kurt Cobain. The

bedraggled Nirvana frontman seethed through the late '80s and early '90s, inspiring a generation of plaid-clad youths reeking of Teen Spirit and apathy to wake up and wield guitars like weapons. Cobain became the sheepish poster boy for a generation he felt isolated from, going from logging-town loner to rock star faster than you can say "Lithium."

Of course, the most infamous part of Cobain's legacy came after his redemptive rise. Twenty-one years after Cobain's April 5, 1994, suicide by shotgun, his life continues to be commemorated with candlelit vigils and scrutinized by Courtney Love—crucifiers. The Myth of Cobain has been immortalized in genre-spanning songs and ill-fated documentary films, notably English documentarian Nick Broomfield's 1998 attempt, *Kurt & Courtney*. In it, Broomfield goes down a badly edited rabbit hole through post-Cobain Seattle, all the while plucking on the cringeworthy conspiracy theories surrounding the musician's death. It also has the distinct honor of being one of the only films to ever be thrown out of the Sundance Film Festival (in 1998, for violating music rights).

But this year's Sundance saw standing ovations, tears and acclaim during the premiere of a very different film about the fallen rock icon, *Kurt Cobain: Montage of Heck*. Directed by Brett Morgen and executive produced by Cobain's daughter, 22-year-old Frances Bean Cobain, the film is a loud, brutal glimpse into a life that continues to loom titan-size.

As far as Cobain closure goes, this film "may be the final chapter," Morgen told *Newsweek*. A key failure of previous Cobain documentaries was lack of access to Nirvana's songs and illuminating archival footage. With zero exclusive material, previous attempts have essentially been chasing a shadow. *Montage of Heck*—which has its HBO premiere May 4—is instead the damn-near-closest thing we have to physically resurrecting the guy, thanks to Morgen's "six

years of legal wrangling and two years of filmmaking.” Devoid of speculative myth-building, the film instead provides a dizzying dive into the growling musician’s mind in his own words.



Kurt Cobain with Frances Bean. Credit: HBO

Before he could realize his vision, Morgen had to contend with the same obstacles other Cobain documentarians faced, such as people hesitant to open up about the musician, even though they held the keys to his story—and to the storage locker where the notorious pack rat’s belongings were rotting. Though Frances Bean, who was only 20 months old when her father committed suicide, has held the rights to his likeness and name since 2010, it was her mother, Courtney Love, Cobain’s widow, who was the catalyst for the burgeoning Montage of Heck project. She’d met with Morgen in 2007, after seeing his documentary *The Kid Stays in the Picture*—an adaptation of a book depicting the rollercoaster life of film producer Robert Evans—and becoming a fan. She asked if he might be keen to make a documentary about her late husband because “it was time to examine this person and humanize him and de-canonize these values that he allegedly stood for—the lack of ambition and these ridiculous myths that had

been built up around him,” she recently told The New York Times.

Morgen agreed, so Love led him to the California storage unit where the remnants of Cobain’s life were stored. There, Morgen found heart-shaped boxes, guitar cases filled with art supplies and sputtering “sound collage” mixtapes Cobain had created, including a 1988 cassette titled “Montage of Heck.” As the filmmaker dug through the archives, he found that Cobain’s tale was much more straightforward than anyone had previously thought. He wasn’t just a miserable junkie or someone who took his life because he couldn’t deal with fame. Instead, a picture began to form of a man who, in very human ways, felt isolated from his peers and longed for a meaningful connection with those closest to him. Cobain was also a formidable painter, illustrator, cartoonist and budding sound engineer with an itch to create, keeping a kind of visual autobiography since the tender age of 3. “He never had idle hands,” Nirvana bassist Krist Novoselic recalls in the film.

While in the storage unit, Morgen discovered something that would help make this case: personal recordings of the frontman narrating his own life, including formative moments, such as his first suicide attempt at 14. “People talking about his life is nowhere near as interesting as how he depicts his life,” Morgen says. For the final film, animator Stefan Nadelman added hyper-realistic renderings of Cobain’s spoken accounts, which are woven through the narrative alongside concert footage, interviews and sketches from his many notebooks. “He left all of this art that provides a beautiful reflection of what he was feeling,” says Morgen. “Kurt is gone, but his art remains, and it’s vibrant, and it’s moving. It needed to come out and tell the story.”



The "Montage of Heck" cassette tape. Credit: HBO

Bolstering Cobain's own words are testimonials from some of the people closest to Cobain, including his mother, sister and first girlfriend, Tracy Marander. "That's a difficult group to bridge, but Frances was the glue," Morgen says, noting that Marander was especially cagey at first. In a stroke of visual genius, Morgen made sure that the most challenging questions were intentionally asked in the testimonials as the sun was waning, and shadows fell across the interviewees' faces. Dripping footage of intestines emphasizing Cobain's well-documented stomach pains—which he self-medicated with heroin—add a grotesquely visceral quality to the portrayal of his struggles.

Cobain fanatics will likely note that only one close friend, Krist Novoselic, was interviewed for *Montage of Heck*. Former Nirvana drummer Dave Grohl, whom Morgen says he chatted with, is noticeably absent. (Scheduling conflicts prevented the Foo Fighters frontman from making the film's final cut.) Missing too is Bikini Kill's Kathleen Hanna, the friend who infamously scrawled "Kurt Smells Like Teen Spirit" onto a wall, and her bandmate, Tobi Vail,

who briefly dated Cobain. (For Cobain memories from former riot grrls and grunge bands, Mark Yarm's grunge oral history, *Everybody Loves Our Town*, should fill in the gaps left by the film.)

Cobain's friendships and place in the Pacific Northwest grunge scene are less of the film's focus than is his lifelong inability to really belong anywhere. *Montage of Heck* takes viewers through the frontman's continual struggles to create stability: first as he's shuffled around different homes as a child, then as he tries to build a home with Marander in Olympia, Washington, then with his bandmates in Nirvana and finally with Love and Frances Bean.

The film also attempts to debunk the idea of Cobain's martyrdom, that he somehow died for your sins. There are many reasons Cobain ended his life and many questions that will likely remain unanswered. The film is able, however, to shed light on certain recurring themes of discontent, humiliation and betrayal as it moves from his unstable childhood to his withdrawn adulthood.

Four days after Cobain's suicide, Love's band Hole released the album *Live Through This*. In it, she would famously declare that she wanted to be the girl with the most cake. Cobain instead "wanted to be the most loved," as his stepmother, Jenny Cobain, explains on-screen.

Frances Bean got involved in *Montage of Heck* partially because she has "no memory of Kurt," as she recently told *Rolling Stone's* David Fricke. "I'm the only person on earth who is emotionally invested in the film but can watch it like an audience member." Because of this, she was able to make critical decisions with Morgen, who says the 18-hour days and time away from his children were worth it, if just to give Cobain's daughter two hours with the father she never knew. "When she saw it, she said: 'You made the movie that was in my head and gave me time with my father,'" Morgen says.

“And that was...powerful. That was the deepest thing I’ve ever done as a filmmaker.”



Benjamin Norman

THE ART OF THE ESCAPE ROOM

ROOM ESCAPE GAMES LET YOU BE MR. MUSTARD AND SOLVE THE MYSTERY. BRING YOUR LEAD PIPE.

David Spira's team is ready. No need for inspirational speeches—the adrenaline (aided by plenty of caffeine) is flowing. They cross the threshold, and the door locks behind them. The seven men and women briskly attack the room, tugging at drawers, trying to lift a print off the wall. Spira flips the rug over, shouting out his discovery into the swirl of an increasing din.

Room escape games lock players in a room where they must seek clues and solve puzzles tied to a story or theme to escape before time runs out, usually in one hour. Already a worldwide phenomenon, room escapes are suddenly hot in America, even capturing the attention of university researchers and corporate marketers. Scott Nicholson, director of the Because Play Matters game lab at Syracuse University, praises the games' interactive nature. "They allow people to leave the world of screens and engage face to face," he says, adding that "because room escapes offer different types of challenges, each member on a team has a time when they are able to be the hero."

In Spira's group, Lindsay Froelich and Lisa Radding thrive on word puzzles, Jason Lisnak is the numbers guru and Jason Cascio is "the hacker" looking for ways to circumvent the designed sequence of puzzles. Spira, the leader of his group of friends, has also become what seems to be America's first room escape blogger and reviewer.

The first five minutes for Spira's team are "organized chaos," says Froelich. "We turn the room over." They developed this tactic of gathering all the puzzles and clues immediately, says Lisnak, because the first time Spira and his friends tried a room escape, they made a bad rookie mistake. "We were trying to solve one puzzle for 10 minutes, but it turned out we were missing a clue that was in the cushion of the chair I was sitting on," he says with a cackle.

They can sometimes be too thorough. Once, while playing a game housed in a former medical office, Spira found a urine sample. He snatched it eagerly and carried it around, certain it was a clue. It was actually trash that had been left behind.

After being born as point-and-click computer games like *Crimson Room*, the live version began in Japan in 2007, spread throughout Asia and reached Eastern Europe by about 2011, becoming especially popular in Budapest, Hungary. A

Japanese import, SCRAP, arrived in San Francisco in 2012. There was little competition for years, but in the past 18 months these games have proliferated at an astonishing rate. Jonathan Murrell, co-founder of the Nashville Escape Game, which opened last May, was recently in Florida launching a second location, with plans for follow-ups this year in Pigeon Forge, Tennessee, and Austin, Texas.

“They're cropping up faster than we can keep track of,” says Spira. “The good ones really are works of art.”

Marty Parker, owner of Room Escape Adventures, estimates there are more than 80 locations and expects more than 300 by year's end. He opened his first in Chicago in December 2013 and now has rooms in 18 American cities, plus three abroad. A voluble pitchman, Parker, who has worked as a day trader and a team mascot, and now promotes mud runs and tomato fights, was “looking for the next thing in the active entertainment industry.” His games are among the few rooms with live actors—each has a chained-up “zombie” who tries to attack players.

Most owners got involved because of an interest in game design and puzzles. Jeff Hsin was an IBM computer engineer who partnered with an electrical engineer and a mechanical engineer to create the Exit Game in Los Angeles, which features things like a laser wall that trips an alarm. “We wanted to design one a little more high-tech,” he says. “Our strength is our Hollywood magic. You should feel like you're in Ocean's Eleven.”

Back at the Hydeout at Mission Escape Games in New York, Spira's team combines pieces found in one area with a clue from another and suddenly hear a creaking sound. A secret passage opens to another room. (Room owners request that few details be divulged; however, Mission Escape founder Derek Tam says the creaking noise as the passage opens is real but he has to pipe it in a second time because players otherwise “just think this old Chinatown building

is making weird noises, and they ignore it and don't see the passage.”)

Room escapes have undergone a rapid evolution, with a greater emphasis on what designers call “the wow factor”—black-light, secret passages and trapdoors are increasingly regular features. Murrell tries imagining an effect—“It would be really cool if players pushed the dynamite down and the wall blew up”—then has his custom builders find a way to pull it off.

In the better rooms, the early reliance on number puzzles and locks has also given way to a more elaborate mix of puzzles and clues. Some alternatives are simply inventive: Jason Cascio from Spira's team says his favorites have included one in which Spira had to use an endoscope on a CPR dummy and another in which they had to use binoculars to find a clue on a restaurant sign down the block. “I'm a nerd for these puzzles,” says Murrell, but he knows not everyone is as captivated. “If it's all number games, my wife just shuts off.”

There is also a greater emphasis on themes and stories. “You want to suspend reality and feel like you're in an alternate universe with your friends,” Radding says. Parker adds that the players need to feel the clues are connected, not random. Spira points to a Time Travel game from SCRAP where one room in “the past” allows players to change the room in “the present” to help solve puzzles. On the other hand, Spira says, SCRAP gets bogged down in obscure math problems: “Their games feel like 10 minutes of cinematic movies wrapped in 50 minutes of mind-numbing homework.”

SCRAP, like the puzzles in Japan, prides itself on a success rate in the single digits. “The Japanese don't care if you get stuck, but American audiences are not like that,” Murrell says. This is a night out of entertainment, “and if you get stuck, you get bored.

“The success rate is one of the biggest debates we have,” he says, adding that his Nashville games are solved perhaps 35 percent of the time. Many places have games with success rates in the 20 percent range but offer one more challenging game. “It needs to be a substantial challenge to feel worthwhile. Also, if you lose and everyone else is escaping, you'll feel like an idiot.”

Some places allow players to request a limited numbers of hints, while others provide as many as needed. Eric Siu, co-founder of Mystery Room NYC in Manhattan, has a timed checklist, and if he sees players struggling, he'll give a hint. “We would love it to be completely organic, but without clues 90 percent of the people would not get their money's worth and the industry would collapse,” Parker says.

For 35 minutes, the team makes steady progress. But Lisnak gets stuck on a crucial number pattern, finally passing it off to Tara Lyons, 22, who had been trying to solve lock combinations with Jackie Vance, 29. No luck. Frustrated, they relent and ask for a hint, then moan when they realize they had accidentally placed a crucial piece of information in their “solved” pile. With that, the pattern is easily solved, and the answers click into place.

This year and next will be a time of rapid expansion for the industry—Spira points to Las Vegas as an underserved market—but everyone sees a saturation point coming. Nicholson and Rik Eberhardt, who runs the MIT Game Lab, say the key for designers is to figure out how to swap out puzzles quickly without undermining the story so customers can replay rooms.

Radding says customer service will become a decisive factor. “There are plenty that can design good puzzles, but many are geeks and nerds who are not good with people, so customer service can be lacking,” she says. “The ones that will survive are the ones who can run a business.”

There are also new avenues for growth. Parker says a large percentage of his business is companies looking for fun team-building exercises. “They learn there's no quick path to success, that it's OK to take risks and be wrong, that there's a process and it requires teamwork,” he says.

Meanwhile, Tam hosted a Penguins of Madagascar room for DreamWorks last year, and NBC Universal's USA Network worked with New York City's Escape the Room to promote its archaeology adventure series Dig with rooms in three cities and at two Universal theme parks.

Given the need to build relationships with fans and the potential for reaching “the nerd audience coveted for fantasy and sci-fi projects,” Spira thinks there'll be more sponsored room escapes coming soon.

And Nicholson sees room escapes as an educational tool for museums and other places. He's designing one for Fort Stanwix National Monument in Rome, New York, that will rely on ways the army concealed messages during the American Revolution, teaching both the history of the fort and the time period. “The potential for these games to be learning tools is significant,” he says. As for the growth of room escapes, he adds, “We haven't seen anything yet.”

With 17 minutes to spare, Spira's team escapes the Hydeout. They share a postmortem with Tam, then head for a celebratory dinner at a Greenwich Village burger joint. The conversation there spans many topics but can't escape room escapes: Froelich will soon try one in Dublin; Lisnak and Lyons will play one in Rome.

As they stand on the sidewalk saying goodbye, Cascio looks at the restaurant's awning, studying the street address. “When you play these games, you see numbers and patterns everywhere,” he says. “You start thinking everything is a clue.”



Toru Hanai/Reuters

EMAIL DEBT FORGIVENESS DAY IS THE HOLIDAY WE NEED

**THOSE EMAILS YOU FORGOT TO RESPOND TO MONTHS
AGO? THERE'S A HOLIDAY FOR THAT.**

First of all, I'm sorry. I meant to respond to your email ages ago. I even started typing a reply once. But I got distracted by a YouTube video of huskies howling, then fell asleep with my laptop next to me in bed.

I have, on any given day, between 10 and 30 unread messages in my inbox. Which seems mild, except that a) they're not really unread and b) most have been sitting there for weeks or even months. (Do emails have expiration dates? Do they go bad?)

It's not that I don't care about the notes that land in the mark-unread vortex. Often, it's that I care too much: I spend weeks waiting for the time to sit and draft a thoughtful reply—and then it's too late. Replying would be weird. If I do, I preface it with a polite lie, like “I only just saw this” (almost universally untrue) or “I don't check this account often” (I set up a forwarding service long ago).

||

sorry i couldnt answer your email.
i was basically on line for 16 hours
today and i didnt want to— I
Love You Condor (@DinkMagic)
September 17, 2014

Email is tyranny. According to one **2012 report**, knowledge workers spend as much as 11 hours of a 40-hour workweek just reading and answering email. And how much more time do we spend merely thinking about replies yet to be sent? Entrepreneur Esther Dyson **put it best** when she wrote that each email “represents a task—something to read, a query to answer, a meeting to schedule, a bill to pay, a request to fulfill or deny.” I emailed Dyson for further

comment, but she didn't respond, which I guess proves her point.

But the best solution to the reply-later trap may not be an app or tech innovation. It's a holiday. I floated the idea last year on Twitter, in a moment of frustration:

||

IDEA: Inbox Amnesty Day On this day you can reply to any email in yr inbox, however long it's been there, free of judgment & self-loathing.— Zach Schonfeld (@zzzzaaaacccchhh) May 6, 2014

PJ Vogt recently had the same idea (withering inboxes think alike) but a different name, and, unlike me, he took action. Vogt, who hosts the Internet-themed podcast Reply All, and co-host Alex Goldman are declaring April 30 “**Email Debt Forgiveness Day**.” It's a simple conceit: On that day, participants can send any email response they've been putting off “without any apologies or explanations for all the time that has lapsed.” The pair invited those planning to take part to leave them voice mails—the best will be played on air—and the response has already been overwhelming.

“I couldn't tell if this was going to be like National Appreciate-Your-Typewriter Day or Valentine's Day,” Vogt says. But he hasn't been disappointed. “Everybody that I've talked to has immediately got it. I thought it would just

be for anxious people. But everyone who's a human being who's used a computer understood a need for this." (So, presumably, will the unwitting participants: those receiving overdue emails on the holiday. The key is to send the recipients a link to the holiday so they understand what's up.)

Vogt, obviously, shares that need. The public radio veteran has 1,138 unread emails, and plans to respond to 20 or 30 of them on the 30th. "It's random people reaching out for advice," he says. "Friends. A lot of times it's after someone says something nice and I felt like I didn't know how to adequately respond."

Once, he struggled to respond to an email from his therapist. "I was like, Man, if I can't write this guy back, there's probably no hope for me." But it's usually not anyone he's likely to see in person. "I don't answer those emails either, but when I see the person I just apologize profusely. I don't know that that satisfies anybody. At least then I feel like I don't have to send the email."

He and Goldman briefly considered making the holiday monthly, but that seemed to cheapen it. Another abandoned idea: making the site say Email Debt Forgiveness Day takes place on whatever day you're checking it.

There are other potential hacks. "I think I'll write a macro to date-stamp all my future emails 'April 30, 2015' as a permanent stress-reduction strategy," jokes longtime Atlantic correspondent James Fallows, who wrote about the future of email for the magazine last summer. (Fallows sent me this email response at 3:41 a.m., which makes me wonder if it was costing him sleep.)

"

If you don't respond to a text or email within a day or two you might as well just reply "Go fuck yourself." — Luke O'Neil (@lukeoneil47) April 7, 2015

From the voice mails he's gotten from listeners, Vogt has heard dozens of tales of Email Avoidance Anxiety Disorder. "There are some examples where somebody has a very thorny emotional problem and it's hard to write the email, and the person on the other end probably is wondering why they haven't gotten the email," he says. "But most of the stories you hear, a) it's very likely the other person doesn't care and b) the email you have to send doesn't have to be very good."

Which is what I'll remind myself when I set aside an hour on the 30th to write replies. That will mean digging up and acknowledging a dozen or so neglected messages, some as old as six or eight months. (PR people **who send me off-topic pitches**: Not you.) There's the one from a close college friend, recounting a Swans concert in detail. Another is from a potential source for a story I wanted to write but couldn't find the news peg for. Yet another is from a founding Smash Mouth member's wife. (I feel most guilty about this non-reply, and am really not making this up.)

I'll respond to your note, too. I'm sorry I didn't get to it earlier. I only just saw it.



C. Minnick/Whyaduck Productions

*THE MAKING OF A
NEW KURT VONNEGUT
DOCUMENTARY TOOK
TWICE AS LONG AS
'BOYHOOD'*

**LOWBROWS CONSIDER HIM AN INTELLECTUAL, AND
INTELLECTUALS CONSIDER HIM TOO LOWBROW.**

Kurt Vonnegut never warned me to wear sunscreen, but he did speak at my college graduation. He also had a

house a town or two away from where I grew up. And one time in New York City, I spent hours talking to a girl I had met at a bar about *Cat's Cradle*. I wound up marrying her, and at our wedding, instead of Corinthians or one of the typical passages, we had an old friend read an excerpt from Vonnegut's *Mother Night*. So you could call me a fan.

You could even call me part of Vonnegut's karass. Coined by the author, it's a group of people linked in a cosmically significant manner, even if the connection isn't immediately apparent. Like when you wind up marrying someone you just ran into one night. Or when you write a letter to a famous author and spend the next 30 years trying to make a movie about him.

This last example is what happened to Robert Weide, an executive producer of *Curb Your Enthusiasm* who has directed and/or produced documentaries on the Marx Brothers, W.C. Fields, Lenny Bruce, Woody Allen and now—thanks to a Kickstarter campaign—Kurt Vonnegut.

Here's what happened: In 1982, after completing *The Marx Brothers in a Nutshell* for PBS, Weide wrote to Vonnegut. A big Marx Brothers fan himself, Vonnegut had seen the film and wrote Weide a friendly response. "He basically said, 'I'm an author. How you make a film about me I don't know, but you're welcome to try. Here's my phone number in New York,'" says Weide. "So that was quite a letter to get from my literary idol."

Weide soon flew to New York to meet his subject. "The great irony is in that initial letter I say that I'm sure I can arrange for financing immediately," says Weide. That was July 1982. "I thought it'd be a snap and I'd have a film ready [the] next year. Boy, it sure didn't turn out that way."

PBS gave Weide the seed money to do his first filming in 1988, with the idea that it would be an *American Masters* episode. But neither PBS nor Weide could come up with enough money to finish the project. "It just lingered, and I figured, I'll go out of pocket. I want to keep filming him. So

I did, over the years, always figuring at some point I'd find the money."

Weide later got turned down for a grant that would have been enough money to complete the film. "They didn't take him seriously as an author," Weide says. "He falls into this weird midrange in that lowbrows consider him an intellectual, and intellectuals consider him a populist author, or too lowbrow."

Eventually, he was persuaded to turn to Kickstarter - despite being convinced that only celebrities could get their projects funded on the crowdsourcing site. Kurt Vonnegut: Unstuck in Time met its funding goal in mid-March, and Weide hopes to have the final film ready by the end of the year.

The documentary will go a long way toward filling out Vonnegut's "greatest generation" origin story, which is told by the man himself in footage shot during a trip to his childhood home in Indianapolis. Some of these scenes were even educational to Vonnegut's daughter, Nanette. "My father invited me to Indianapolis, and he didn't say anything about a documentary being filmed. I was kind of grumpy that I had to share my father with a camera crew," she says, "[But] it was pretty wonderful and intense for me.... He was in a zone.... And remembering his childhood very fondly, of course, before the war, before things got really dicey."

Vonnegut's experience in World War II is well-documented: He fought in the Battle of the Bulge, then was taken prisoner by the Germans and held in Dresden, where he witnessed the firebombing of the city by the Allies and was one of a handful of people to survive thanks to the dumb luck of being stashed underground in a meat locker. Witnessing what war does to people provided the raw material for Slaughterhouse-Five.

Initially, Vonnegut published novels that more often than not went unreviewed, paperbacks that were sold on revolving racks in drug stores and bus depots for 35 cents

a pop. (“A remarkable and terrifying novel of how life might be for the space travelers of the future” warns the jacket copy on the lurid cover for the original edition of *The Sirens of Titan*.) The books didn’t sell—at least not until the 1969 release of *Slaughterhouse-Five*, which made him world famous at the age of 47. That book’s been blessed and burned, ballyhooed and banned.

A major theme in Vonnegut’s work is the nature and passage of time, and because of Weide’s funding problems, it’s also a big theme in the film. “Unstuck in time” is a reference to *Slaughterhouse-Five*—thanks to a sort of time-traveling post-traumatic stress disorder, main character Billy Pilgrim experiences moments from his life in a nonlinear fashion. And so it goes with Weide, who started this project at age 22, when Vonnegut—whom he affectionately refers to as “the old man”—had just turned 60. “This year, I’ll be four years short of the old man’s age when I met him. And I’m still working on the same damn film! It’s just crazy.”

Jerome Klinkowitz, one of the first academic critics to seriously evaluate Vonnegut, sums up the author’s appeal. “He sounds like an American, and he sounds like an American who you can trust...the same way that Mark Twain still sounds like an American...and we trust him.”

And Vonnegut trusted Weide, who recalls that, “Whenever I’d say, ‘If you’re going to Indianapolis, why don’t I go with you? We’ll drive out together, and I’ll do some filming there.’ He was always up for that.” But after decades went by without a backer, the film became a running joke between the two men, “It was ‘the film that wouldn’t die’ or ‘that wouldn’t live,’” says Weide. “I was always filming him. But by that time, we were getting together just because we were friends, with or without the film.”

The eventual blurring of their personal and professional relationship led Weide to bring in filmmaker Don Argott (Rock School), as he felt he could no longer be objective about the dozens of hours of footage he shot from the ’80s

until Vonnegut's death in 2007. "[Weide] is like family," says Nanette. "What I feel with this documentary is just a depth of material that is staggering. He's got it exactly right. It just takes my breath away."

Vonnegut got to see some footage before he died, "so he knew that there was actually film in the cameras," says Weide. "We did have a screening of the rough-cut.... I sat next to him and heard his little reactions to the film, and a lot of things really touched him and made him wipe his eyes. So I had the pleasure of knowing that he saw this in some form."

Vonnegut remains as relevant as ever, even eight years after his death, largely because he understood the absurdity of humanity. What once seemed like very speculative fiction now seems like reportage. "I think he understood that the world was going to hell, so it all came down to what you did individually," says Weide. "He talks about saints. And to him, a saint is somebody who makes other people's lives easier in not just big ways but small ways. A smile or a thank-you or whatever."

Like the 3,755 Kickstarter backers of *Unstuck in Time*, a karass to whom all Vonnegut fans owe a smile.

01

CAPSIZED

Rhodes, Greece—Migrants make their way to shore after a sailboat ran aground off the Greek island of Zefyros on April 20. At least three people died. Less than 24 hours earlier, as many as 900 migrants who had set sail from Libya were feared dead after their boat capsized. The survivors reported overcrowding that caused the boat to heel dangerously. They said people were trapped inside locked rooms. Over the past year, tens of thousands of migrants have fled war in North Africa and the Middle East for Europe, often risking their lives to cross the Mediterranean in barely seaworthy smugglers' boats. As the humanitarian crisis grows, European foreign ministers called for a meeting in Luxembourg on how to respond to the influx of people at a time of budget constraints and anti-immigrant public sentiment.



02

PLAYING BOTH SIDES

Moscow—Russian President Vladimir Putin speaks after his annual phone-in with Russians, which lasted nearly four hours and was broadcast on television on April 16. Putin accused Washington of putting pressure on some world leaders not to attend events in Russia marking the 70th anniversary of the end of World War II in Europe. Earlier in the week, Putin angered Western powers by lifting a ban on selling anti-aircraft missile systems to Iran. The sale, worth an estimated \$800 million, is further straining relations with Washington and is viewed by some in Israel as a threat.



Maxim Shemetov/Reuters

03

HOMEWRECKER

Sanaa, Yemen—A man checks the damage to a house after an airstrike by Saudi-led coalition warplanes on a missile depot on Fajj Attan Hill, in the rebel-held part of the capital, on April 20. Explosions have toppled homes miles away from targeted sites and sent residents scrambling for shelter. Saudi Arabia and some of its Arab neighbors have been bombing the Iran-backed Houthi rebels with the goal of reinstating the president, Abed Rabbo Mansour Hadi, who was forced out of the capital in January. U.S. officials said they had tracked a convoy of Iranian ships in the area that they suspected was trying to deliver arms to the Houthis. A Pentagon spokesman said a U.S. aircraft carrier and support ships were dispatched to the waters near Yemen to block any attempts by Iran to reach the coast.



04

STREETS OF RAGE

Johannesburg—Displaced people who fled anti-immigrant violence in the country's financial hub and eastern coastal cities gather April 19 at a camp set up by the government. At least eight people have been killed, 150 have been arrested, and more than 1,000 displaced in the past few weeks as xenophobic violence swept through the nation. Mobs wielding machetes targeted foreigners and torched foreign-owned businesses. With unemployment at 25 percent, some South Africans blame migrants for taking their jobs. In response to the unrest, President Jacob Zuma canceled a trip to Indonesia, and Home Minister Malusi Gigaba promised the government would do more to bring a swift end to “all acts that seek to plunge our country into anarchy.”



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